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Volume XLIX

JUNE, 1915

$2.00 per year
$3.00 with Directory

TEXTILE WORLD RECORD

LORD & NAGLE COMPANY ~ BOSTON · MASS.

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The TEXTILE-FINISHING MACHINERY CO.

Howard Building, Providence, R. I.

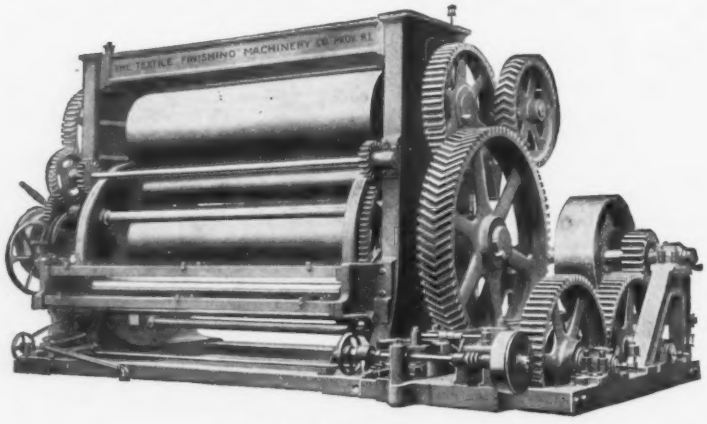
BUILDERS OF

Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Machinery

FOR

TEXTILE FABRICS AND WARPS

Plans and Estimates for Complete Plants



Hydraulic Mangle

Calenders and Mangles for Finishing Damask, Linen, Crash and Towelling

Hydraulic Schreiner Calenders

Mercerizing Machinery

for

Cotton Goods, Warps and Skeins

Bleaching, Drying, Dyeing

and

Finishing Machinery

For Textile Fabrics

Bleach House
Machinery of All Kinds

Drying Machines
(Copper and Tinned Steel Cylinders)

Singeing Machines
(Oil and Gas)

Color Kettles
with Stirrers

Open Soaping
Machines

Calenders
For all Purposes

Mercerizing Ranges
(Piece and Warp)

High Speed Tentering Machines
for elastic finish with Automatic Clamps

Return Tentering Machines
for Woolen Goods

Hydraulic Presses

Dye House
Machinery of All Kinds

We are also sole Licensees and Makers in the United States for Daniel Foxwell & Sons, Manchester, England, of the

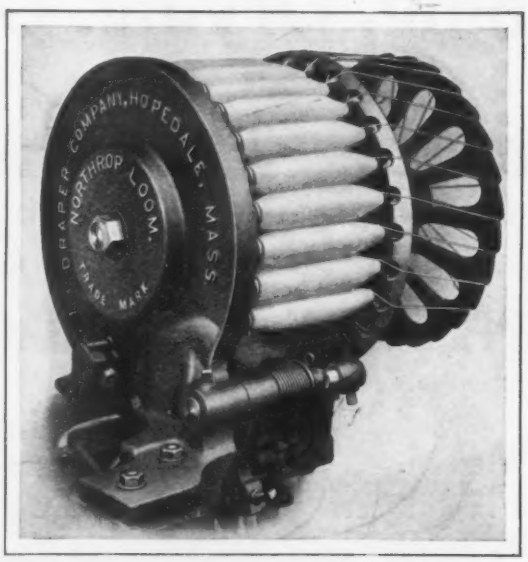
KAY & FOXWELL'S Patent Pneumatic Guider and Feeder

Simpson Patent Cloth Winder, No Stopping to Change Rolls, — Increased Production

H. W. Butterworth & Sons Co.

Providence Office
1212 TURKS HEAD BUILDING

PHILADELPHIA, PA.



NORTHROP LOOMS

TRADE MARK REGISTERED

Increase product per loom
Increase wages per weaver
Reduce cost of weaving per yard
Pay 20 per cent. or more on the investment

Can YOU Afford

to Do Without Them?

DRAPER COMPANY

HOPEDALE MASS.

DRAPER COMPANY

Northrop Loom Repairs

FIT

Northrop Looms

TRADE MARK REGISTERED

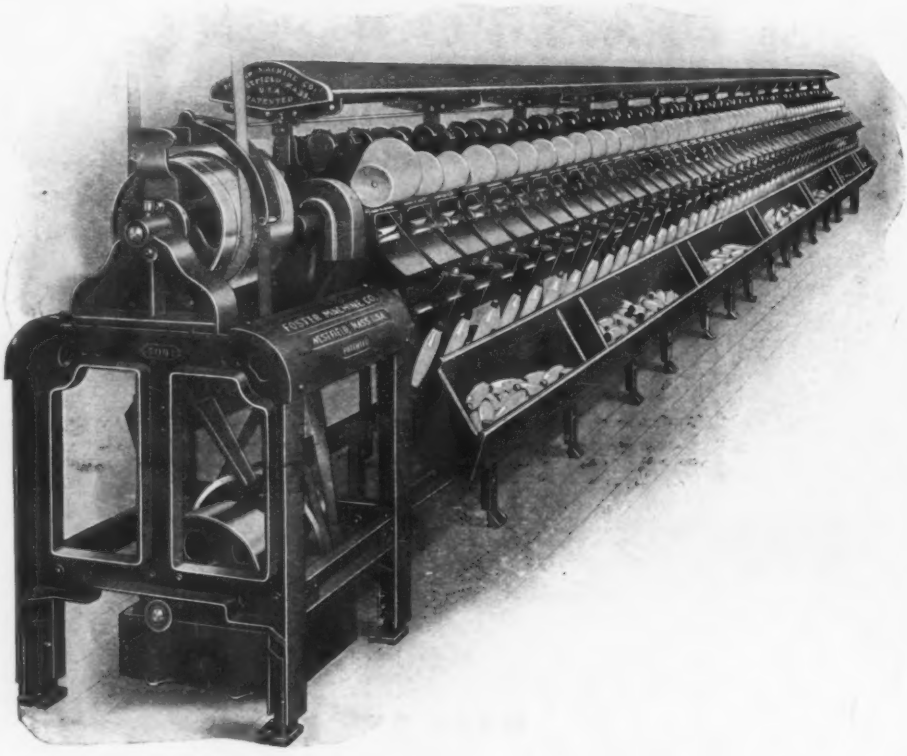
MADE BY

DRAPER COMPANY

Hopedale Mass.

J. D. CLOUDMAN Southern Agent
188 South Forsyth Street Atlanta Georgia

The Foster Model 30



The Model 30 Cone Winder has every good principle of former Models incorporated in it. In addition, the new Model is more flexible of adjustment and may be set to produce finished cones of much greater taper than former Models, although paper cones of the same or lesser pitch are used.

Foster Machine Company

Westfield, Massachusetts

JOHN HILL, Southern Agent, 1014 Healey Bldg., Atlanta, Ga.

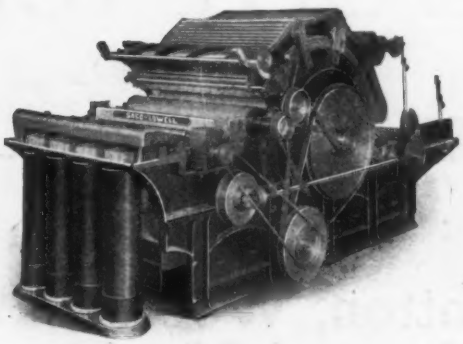
Saco-Lowell Shops

TEXTILE MACHINERY

WASTE RECLAIMING MACHINERY

COMPLETE COTTON MILL EQUIPMENT

Including:
Pickers
Cards
Drawing
Evener Drawing
Roving
Spinning
Twisters
Slashers
Spoolers
Reels
Winders
Warpers
Looms



FOUR COILER FRONT CARD

Used in connection with our **WASTE SYSTEM**

WORSTED MACHINERY

Including:
Revolving Creels
Gill Boxes
Drawing Frames
Reducing and Roving Frames
Cap Ring and Flyer Spinning and Twisting Frames
Jack Spoolers

THE RESULT OF OUR LONG EXPERIENCE AND STUDY UNDER ACTUAL MILL CONDITIONS ENABLES US TO BUILD MACHINERY WHICH SUCCESSFULLY MEETS THE VARIED REQUIREMENTS

Shops—
Lowell, Mass.
Biddeford, Maine
Newton Upper Falls, Mass.

Executive Offices—
77 Franklin Street,
Boston, Mass.

Southern Agent, ROGERS W. DAVIS,
Charlotte, N. C.

LEIGH & BUTLER

IMPORTING ENGINEERS

232 Summer Street, Boston, Mass, U. S. A.

Long Distance Telephone—
Main 2693

Cable Address—
"Leigh," Boston

TEXTILE MACHINERY

Sole Agents in the United States and Canada for

PLATT BROS. & CO., Ltd.

OF OLDHAM, ENGLAND

By far the Largest Makers in the World of

Cotton, Woolen and Worsted Machinery

Also Sole Agents in U. S. and Canada for

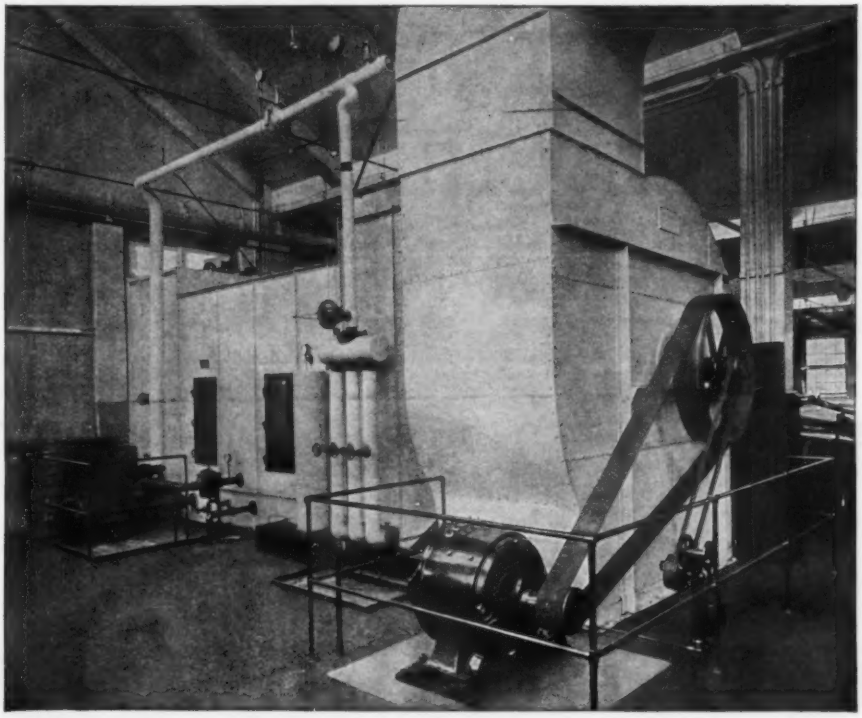
MATHER & PLATT, Ltd.

Equipment of Complete Works for

BLEACHING, CALICO PRINTING, DYEING AND FINISHING

Patent Mechanical FILTERS for Town Supplies and all Industrial Purposes

Wool Washing and Drying Machines, Napping Machines, Sykes' Card Clothing for Cotton, Critchley's Card Clothing for Woolen and Worsted, Wilson Bros'. Bobbins, etc., Harding's Pins, Fallers and Circles, Dronsfield's Grinding Machinery and Emery Fillet; Double Loop Bands, Scroll Banding etc.; Condenser and Gill Box Aprons, etc.



There is this much about it—when a textile plant is

"Carrier Equipped"

there is no reason in the world why it can't compete with any other plant, anywhere, on any grade of yarn or fabric. Have you seen our catalog? It's free.

Carrier Air Conditioning Co.

Of America

No. 39 Cortlandt Street, New York City

NEW ENGLAND
176 Federal St.
Boston

CHICAGO
Ft. Dearborn Bldg.,
Clark and Monroe Streets

PHILADELPHIA
734 Real Estate Trust Building

BUFFALO, 490 Broadway

COTTON MILL MACHINERY

Carding Spinning

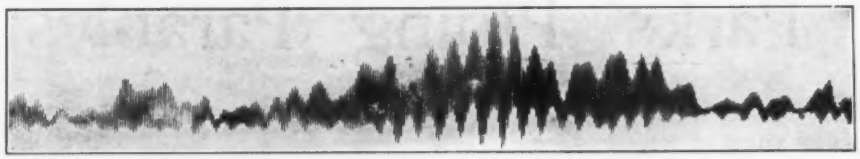
MASON MACHINE WORKS

Drawing Weaving

Executive Office, 77 Franklin Street, Boston, Mass.

Southern Office, Greenville, S. C., Edwin Howard

Works at Taunton, Mass.



The chart illustrated above was made by the Siesmograph. It shows that most mills and factories vibrate more than their owners realize. Why this vibration has a very distinct destructive effect upon ordinary paint is shown below.

If your building vibrates—all the *more* reason for using "Barreled Sunlight"

Your building vibrates in two directions—up and down and from side to side.

These vibrations are so great, that in some plants a pail of water, full to the brim is often lowered two or three inches in a day. In other plants vibrations make it difficult to write legibly.

What do these vibrations do to the **paint on your ceilings and walls?** Ordinary "mill whites" (all of which are imitations of the original—Rice's) contain **varnish.** Varnish dries too brittle, because the outer surface tends to return to its original brittle "gum" state. Varnish paints do not "give," and therefore **must** crack under the strain of vibration.

Rice's Gloss Mill-White is the **only gloss paint that contains no varnish.** It is an **oil** paint, yet does not yellow like oil paints. It is made by a special process discovered and owned exclusively by us. It does not crack or peel under vibration and when properly applied **will not flake or scale.**

It is not a cold-water paint but **by the "Rice Method" it can be applied over old cold-water paint.**

Rice's has proved its merit in the biggest textile mills of the country. So superior is it in every respect to its many imitations, that we give you the following guarantee:

WE GUARANTEE that if Rice's does not remain white longer than any other paint, applied at the same time and under the same conditions, ***we will give, free, enough Rice's to repaint the job with one coat.*** We also guarantee that, properly applied, Rice's will not flake or scale. You cannot lose under this guarantee.

Write for our booklet, "The Yellow Peril" and Sample Board

Reg. U. S. Pat. Off.

RICE'S GLOSS MILL-WHITE

U. S. GUTTA PERCHA PAINT CO.
20 Dudley Street, Providence, R. I.

On concrete surfaces

On inside concrete, Rice's Granolith makes the best possible primer for a second coat of Rice's Gloss Mill-White—giving a tile-like enamel finish at no more expense than lead and oil paint

Rice's Granolith

Parks' Piping Parables

It's a plain matter of common sense that an opening of an inch in a window in the northeast corner of the house with a strong wind blowing from the northeast will give you more fresh air than you can get on a still night with all the windows open.

So when you have been using steam on a high pressure basis direct from the boiler, you can get all you want through a one, two or three inch pipe—and if you set about to use exhaust steam you must open the window further—maybe two or three of them.

The work required of a set of heating coils—or of dye kettles—or of dry houses—or any apparatus using heat is simply pounds of steam, or billions of heat units. If we can determine the number of heat units it's a simple matter to provide the vehicle by means of which to convey them.

But there's no sense in sending them by express when freight will answer.

You don't have to be an engineer to know that when the pressure is low in your water pipes, you don't get much water through the garden hose.

Back yard engineering makes clear that the greater the pressure in the pipe, the higher the velocity of the fluid it contains; and the greater the velocity the greater the quantity that may be delivered through a pipe of given area. If you will give me pressure enough, I will run your whole blamed mill on a 2" pipe—engine and all—and I don't care how big it is. On the other hand, I'll run it on the pressure that is generated by a tea-kettle if you will give me pipes big enough.

Whether it is steam for the engines of a Mauretania—or steam for a glue kettle—the problem is always this: How much is the demand for steam? That is—how many million heat units will be used.

The rest is mere detail. Sheets of engineers' notes, crazy computations of messy little figures, mysterious manipulations of slide rules, formidable formulae, ink, paper, blueprints, musings, imprecations, sweat.

Probably now that I have told you how, you can do it yourself.

Before you make radical changes in your steam plant, wouldn't it be well to consult someone who has no "fads" to sell; and yet someone who knows the steam problems of the manufacturer?

I am led to make this remark because of a chain of circumstances that recently one of the scouts called to my attention.

Happened first, that a certain manufacturer suspected that his steam plant wasn't all it ought to be, and called in one of our engineers.

Here was what the engineer found:

A fairly good sized engine running non-condensing, the exhaust steam from which is entirely "killed" by heaters supplying plenty of hot water for manufacturing purposes.

The heaters and high pressure drips give a feed water temperature around 230° F.

Notwithstanding the fact that steam from the boilers was used direct for heating, etc., our engineer told the manufacturer that there was little that we could do for him; that an exhaust steam system might show a little better fuel economy, but under the circumstances would not pay well enough to warrant the expense.

Happened next, that along came a man who sold economizers. And this economical economizer man engineered an economizer that didn't economize. When it got into commission it interfered so much with the draft that the plant couldn't make steam fast enough to satisfy the demands out in the factory.

It is such happenings as these that emphasize the position that we have taken as engineers.

On such problems we assume a responsibility that it would be difficult to obtain in the customary method of employing an engineer, he in turn employing a contractor.

The contractor does not guarantee the engineers' mistakes and they do make them even though the remark may be heresy. And it's unprofessional for the engineer to guarantee anything.

So it is on these matters of steam jobs we've got the engineers beat; both in point of service rendered and responsibility assumed. And we haven't any quarrel with the engineers either.

We even go so far as to say that we like some of them.

PARKO

The G. M. Parks Company, Fitchburg, Massachusetts

Humidification Simplified

To those who are familiar with the more or less complicated mechanism, numerous parts and contraptions of some humidifiers, the TURBO is a revelation in simplicity.

From this point of view there is so little to the TURBO that the same men who are surprised at its simplicity might doubt its efficiency knowing as they do how many parts there are to other systems.

All doubt on this point, however, is eliminated by the guarantee that goes with the TURBO insuring its complete satisfaction to the individual user, that is guaranteeing to humidify *your* mill as *your* mill should be humidified.

Just as there are few parts to the TURBO system, so there are few repairs and few repair parts. Even a "green man" can't go wrong in taking care of the TURBO SYSTEM.

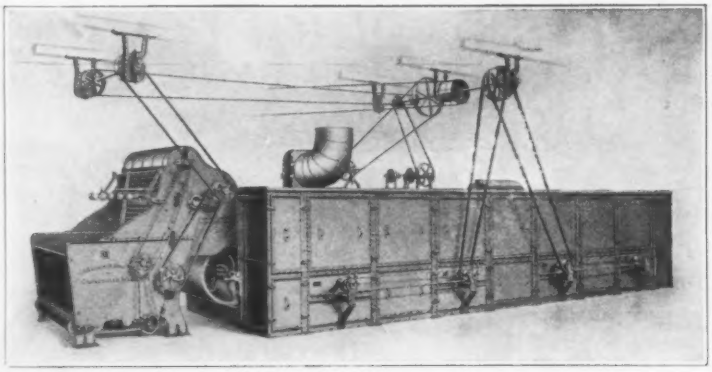
If you want to be *satisfied* that your mill is properly *humidified* have it *Turbo-fied.*

We have a catalog that gives you all the needed details—shall we send it or a Turbo Engineer, or both? Your request will carry no obligation to buy.

The G. M. Parks Company

Fitchburg, Mass.

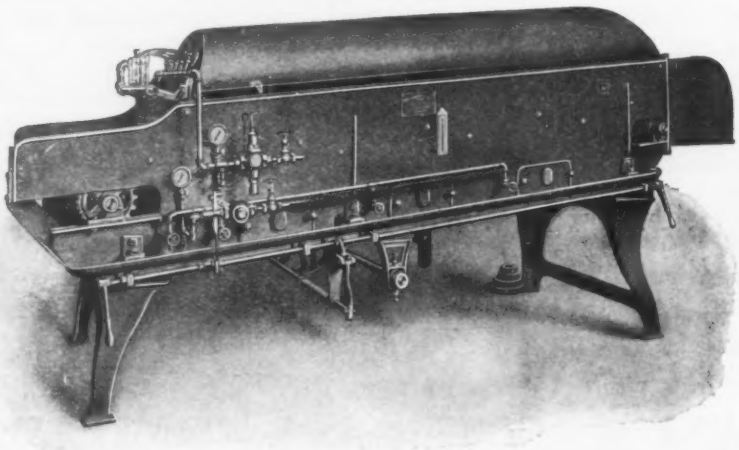
Southern Office, 200 Commercial Bank Building, Charlotte, N. C. **J. S. COTHRAN, Mgr.**



Sargent Automatic Drying Machines

For Drying Wool, Cotton, Hair, Silk, Flax

Containing exclusive features which permit greatest economy in operation. Ball Bearing Fans. Improved principle air circulation. Specially designed Feeders Automatic Apron Adjusting Device



The Yarn Conditioning Machine

The most effective and systematic method of setting twist
Eliminates Kinky Yarn difficulties

Wool Washers, Wool Dusters and Openers
Burr Pickers, Automatic Feeds for Cotton and Wool
Complete Carbonizing Plants

C. G. Sargent's Sons Corp., Graniteville, Mass.

The One Question is Simplified by this Book

The saving that would ensue from having employees working without pay, is no more obvious nor certain than the saving from the gravity method of conveying merchandise from upper to lower floors. The Otis Gravity Spiral Conveyor, requiring no operator nor operating power, saves the labor and expense, and most of the time otherwise required for this work.

The one and only question for the textile manufacturer is whether this Conveyor is practical for your business and your plant. Can it take care of all the downward movement of supplies, unfinished and finished products that adds heavily to your expenses —such as bales of cotton or grey cloth, bobbins, spools, large packages, filling yarn or warp yarn, finished or partly finished garments, cased goods.

You find this question simplified by this new book, "Otis Gravity Spiral Conveyors." You find it simplified by this Book's complete descriptions of ten typical installations and full information on all the up-to-date improvements and the different types of these Conveyors. You find this Conveyor is practical for almost every industry including your own, conducted on two or more floors and requiring any considerable conveying of any kind of goods from upper to lower floor or floors.

If you want to know about a proven way to increase the profits without increasing the volume of your business—fill in and mail this coupon today

Otis Elevator Company

Eleventh Ave. and 26th St., New York

Offices in all Principal Cities of the World

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OTIS
Elevator Co.
New York

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The Hunter

NO. 10
FULLING
MILL

DRIVING SIDE

GEAR DRIVE

CLOTH WASHERS

PEICE DYE
KETTLES

SOAPING
MACHINES

BELT DRIVE

ROPE DRIVE

JAMES HUNTER MACHINE CO.

NORTH ADAMS, MASS., U. S. A.

SPECIAL MILL SUPPLIES
THAT HELP INCREASE PRODUCTION

New Hand Threading Shuttle

This new patented shuttle is the simplest, most effective, and quickly threaded shuttle made. It can be operated with the finest silk or the coarsest filling — will neither *unthread* nor "balloon"—it is arranged so that lint may easily be removed, and also that felt may be inserted for tension purposes. It complies with the Massachusetts sanitary shuttle law.

Never-Slip Cop Spindles and Tubes

We can guarantee that with this combination you can run your looms faster and with longer cops than with any other spindles or tubes. With this arrangement there is no waste of filling.

Paper Cop Tubes, Cones and Shells

We make a complete line of these, all of the very finest quality — samples sent free on request.

Shuttles and Shuttle Irons

MADE FOR ALL TEXTILE PURPOSES

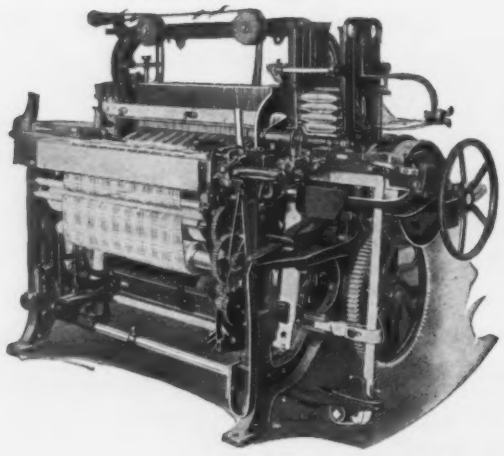
When in need of any of these products, all of which are fully patented and protected, give us a trial order — we can guarantee you complete satisfaction.

American Textile Specialty Machinery Co.

670 Eddy Street, - Providence, R. I.

Also 13th St. and Boulevard, Long Island City

Crompton & Knowles Loom Works



Automatic Gingham Looms

One of our latest productions for weaving goods of two or more colors in the filling. Like every loom we build, it has the advantage of a successful mill test.

WORCESTER, MASS.

Providence, R. I. **Philadelphia, Pa.**

Southern representative, ALEXANDER & GARSED, Charlotte, N. C.

ECONOMY AND SAFETY

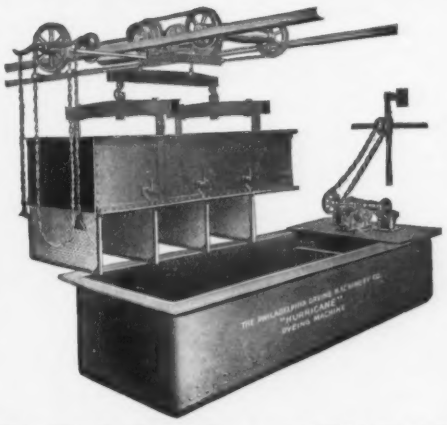
YOU GET BOTH WITH

"Hurricane" Machinery

FOR

HOSIERY
SKEIN
YARN
SLUBBING
etc.

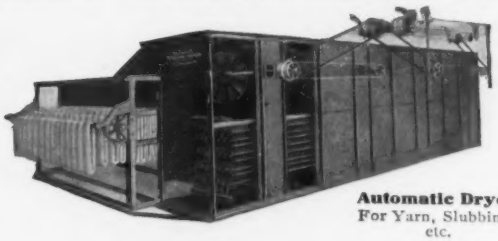
The best and mosteconomical Dyeing Machines



BETTER DYEING at LESS EXPENSE

Give us an opportunity to prove our claims

"Hurricane" Circulating Dyeing Machines are built in various sizes and types



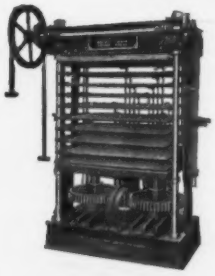
Automatic Dryer
For Yarn, Slubbing, etc.

Complete Equipments for

Dyeing
Scouring
Bleaching
Carbonizing

FIRE-PROOF DRYERS

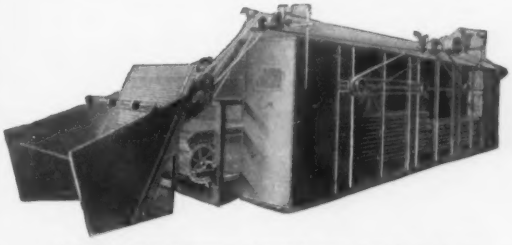
STEEL CONSTRUCTION INSULATED WITH ASBESTOS



Power-Screw and Hydraulic
PRESSES

Fans

Motor and Belt Driven



AUTOMATIC STOCK DRYER
(With Sectional-Continuous Conveyor)
For Cotton, Wool, Hair, Rags, etc.

THE PHILADELPHIA DRYING MACHINERY CO.

Main Office and Works: 6721 Germantown Ave., Phila., Pa. **Boston Office: 53 State Street**

A Good Introduction

Insures A Satisfactory Interview

The Textile World Record introduces the men who *make*, to the men who *buy* textile machinery, equipment and supplies. Both are benefited by the introduction.

With the *Buyers* it carries the weight of long and friendly association and leadership, old in years but progressive in policy, popular yet authoritative; comprehensive in its interesting treatment of all branches of the textile field.

The *Makers* find in the Textile World Record a paper whose contents and character appeal to progressive mill owners, managers, superintendents and foremen of departments—men interested in machinery and responsible for results. They are favorably impressed with its frankness in having for years furnished exact figures of circulation (at present 6200) and giving advertisers the privilege of examining its subscription list.

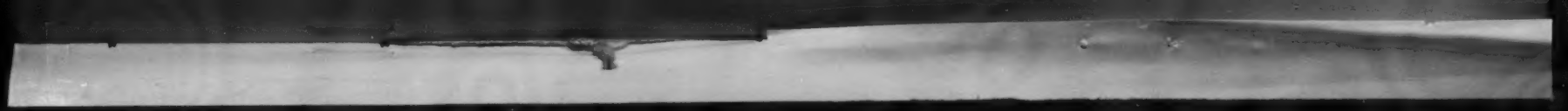
Through the Textile World Record, advertisers can tell their story month by month to men—actual paid-in-advance subscribers—who spend $250,000,000 a year on textile machinery, equipment and supplies.

That is why it is regularly used by 400 advertisers, a large number of whom concentrate their textile appropriation in large spaces in its pages, where they have found by experience that it does the most good.

The Textile World Record

Lord & Nagle Co., Publishers

144 Congress Street, Boston, Mass.



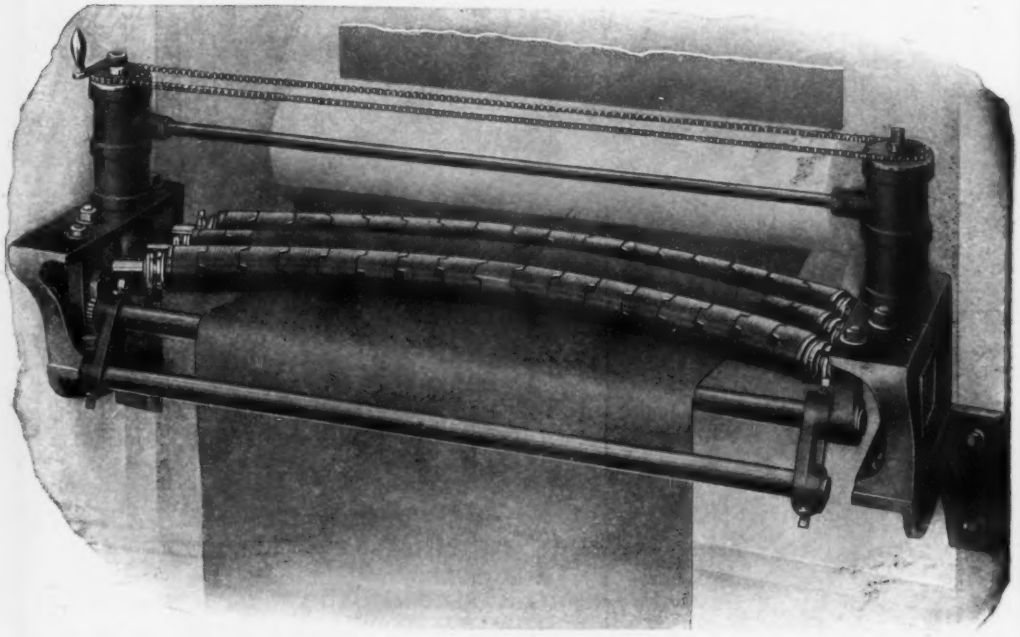
THOMAS LEYLAND & COMPANY

F. T. Walsh, Manager

60 India Street, Boston, Mass. WORKS AT READVILLE, MASS.

Sole Manufacturers of THE WILLIAM MYCOCK

Improved Regulating Cloth Expander



Expander attached to Calender showing Regulating Motion and Adjustable Tension Bars

This Expander and its improved features are fully protected by basic United States patents, and by others still pending, under which the builders will maintain their patent rights against any who may violate such rights by building, selling or using machines of this character.

We solicit correspondence from those having new ideas for Calico Printing, Dyeing, or Bleaching Machinery, either patented, or capable of being patented, and which they wish developed or manufactured.

Scutchers, Sewing Machines, Open Bleaching Machines, Blanket Washers for Calico Printers, Guides, Etc.

Starch

DO YOU REALIZE THE IMPORTANCE OF GOOD SIZING IN YOUR MILL? STARCH IS ONE OF THE MOST IMPORTANT MATERIALS USED IN THE MANUFACTURE OF COTTON.

Some manufacturers use the cheapest starch on the market, because it is cheap; some use potato starch, because they do not know the value of corn starch; some pay a high price for a brand name without knowing what they are getting; while others have made a study of their sizing process and use the kind of starch which is best adapted to their particular class of work and which produces maximum results at minimum cost. It is needless to say that the manufacturer who has made a study of his process and knows what he is using and why he is using it, is getting better results for less money than the manufacturer who is simply guessing.

We have made a scientific study of the requirements of the industry and now manufacture special starches to meet every requirement of the textile industry.

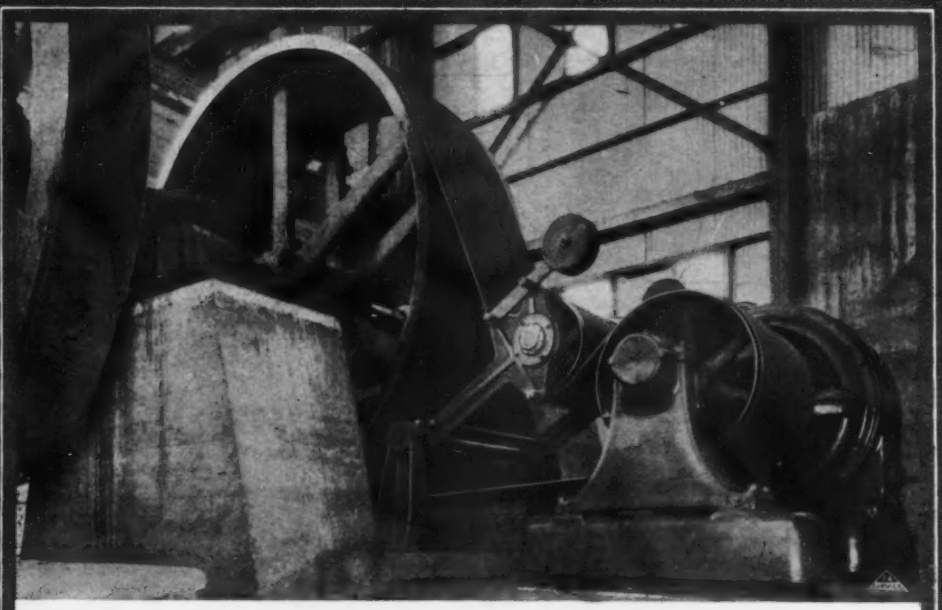
We have a textile expert who will study your problem and show you how to improve your sizing process.

For full information address

Corn Products Refining Company

17 Battery Place, New York, N. Y.

Starch



"Making Little Ones Out of Big Ones"

Despite the heading this isn't an epic of Sing Sing. It is merely another chapter of the Duxbak story. The New Haven Trap Rock Co. (Mr. P. K. Yates, designing and consulting engineer) has erected a new rock crushing plant at North Branford, Conn., and a 30" wide double Duxbak Waterproof Leather Belt is transmitting the power from a 250 H. P. motor to the stone crushing machinery. The Duxbak Belt is running on a Lenix Drive, and as the belt centers are only 10 ft. 6 in. apart, while the driven pulley is 10 ft. diameter and the motor pulley 2 ft. 6 in. diameter, the belt is wrapped about seven-eighths of the way around both driven and driving pulleys.

It's mighty severe service—a thorough test of the merits of a belt. But Duxbak as usual comes through with flying colors. We'll be glad to supply full facts and figures on economies effected by use of Duxbak.

DUXBAK BELTING
TRADE MARK

Chas. A. Schieren Company
ESTABLISHED 1868

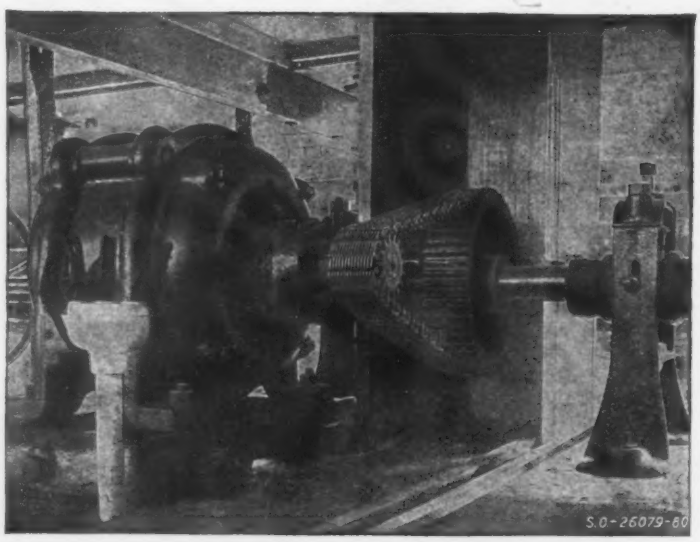
TANNERS
Belt Manufacturers

Oak Leather Tanneries, Bristol, Tenn.

New York, 21 Ferry Street

BOSTON: 641 and 643 Atlantic Ave.
PHILADELPHIA: 226 No. Third St.
SEATTLE, Wash.: 620 Fourth Ave.
CHICAGO: 128 W. Kinzie St.
DENVER: 1752 Arapahoe St.
PITTSBURGH: 205 Wood St.
PETERSBURG, Va.: 20 Shore St.
NEW ORLEANS: 402 Canal St.

The Texas Chas. A. Schieren Co., Inc.
106 So. Market St., DALLAS, Texas



No,–not a big one

It's a close view of a 5 HP MORSE Silent Chain Drive to line shaft under Stitching Tables in a Textile Plant.

This is one of seven similar drives, each chain being 5-8" pitch, 2 1-2" wide, run over sprockets of 15 and 53 teeth, 15" centers, at 1140 and 322 R. P. M.

Wherever used, MORSE Silent Chains are at once recognized as the most efficient and economical means for transmitting power. 1,200,000 HP in daily use.

Morse Chain Company, Ithaca, N. Y.

BOSTON, 141 Milk Street NEW YORK, 50 Church Street

WATSON, LAIDLAW & CO. LD.

DUNDAS ST. SOUTH, GLASGOW

PATENT WATER-DRIVEN

HYDRO-EXTRACTOR

Underdriven Baskets

24 in. Diameter to 48 in.

Suspended Baskets

30 in. Diameter to 84 in.

Retain the benefit of self-balancing with entire absence of belts and gearing. No working parts requiring lubrication except spindle, which only requires a little grease once or twice a year. Can be placed anywhere regardless of power or moisture.

ABSOLUTELY SAFE

CALL OR ADDRESS

W. J. WAYTE INCORPORATED

ONE LIBERTY STREET, NEW YORK

Pacific Coast Agents, - - BOURRET & KIRKWOOD, Seattle, Wash.

FIG. 20.

Oblong Style

Heavy, strong cotton duck. Leather binding. Full length frame pockets. Handles securely fastened. Renewable hardwood shoes. Made also with iron shoes (Fig. 38) dragged but little.

Lane Canvas Mill Baskets

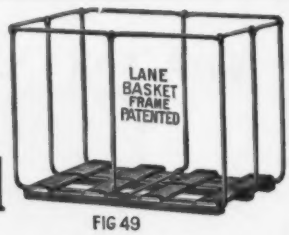


FIG 49

Lane Basket Frame

Round spring steel. Uprights fastened to hoop by *flexible eyejoints*, guaranteed against breakage. Light and exceedingly strong.

Boxes and Trucks

Essentially

Profit Makers

Lane	*Others*
Smooth, flexible surfaces	Nails, splinters, unyielding
ELIMINATE WASTE	**MAKE WASTE**
Light Weight	Heavy and Clumsy
GREATER HELP EFFICIENCY	**UNNECESSARY FATIGUE**
Life measured by years	Their days are numbered
LOW ULTIMATE COST	**HIGH YEARLY EXPENSE**

Why not line up in the Lane Column?

FIG. 27

Lane Truck

Made as shown, or *with Duck Partition*. Mounted on stationary frame casters, with *thread guards*, as above, or on swivel frame casters.

"A Style for every use"

Write for Catalog and Prices

W. T. Lane & Bro.

Manufacturers

Poughkeepsie, N.Y.

FIG. 22.

Round Taper

Materials and constuction same as Fig. 20. Made also with iron shoes (Fig. 38) if desired.

New Process Noiseless Pinions

Protect the motor and machine builders — make conditions favorable for profitable work

Send for booklet
"Noiseless Gear Driving"

NEW PROCESS IS TO ALL OTHER RAWHIDE AS STEEL IS TO IRON

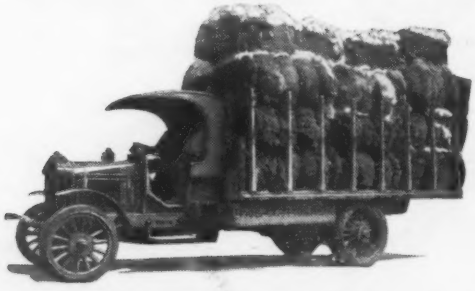
N.P.R.H. NEW PROCESS GEAR CORPORATION N.P.R.H.

SYRACUSE, N.Y.

Canadian Agents: Robert Gardner & Son, Ltd., Montreal

105

Pierce-Arrow Motor Trucks *in the* Textile Trade



For the rapid and economical transportation of both raw materials and finished product, Pierce-Arrow 5-ton and 2-ton worm gear motor trucks have already a well-established reputation in the textile trade.

It is worth bearing in mind that the worm gear drive, particularly advantageous in textile service due to its extreme reliability and absolute cleanliness, was first introduced in this country by the Pierce-Arrow Motor Car Company. This construction is now very generally imitated, but no other American worm gear motor truck embodies the valuable results of years of experience under actual working conditions in many different kinds of service. If the advantages of worm gear drive appeal to you, it will surely be wise to purchase a truck which has long since passed the experimental stage.

If you will advise us exactly what your service requirements are, we can probably put you in touch with some textile operator who has found the Pierce-Arrow motor truck a satisfactory solution of a transportation problem similar to your own. The names of representative Pierce-Arrow truck owners in the textile trade follow:

The Worm-Gear
All Pierce-Arrow Trucks are equipped with the worm-gear drive, which is a positive guarantee of effective service under the most difficult conditions.

The Goodall Worsted Co., Sanford, Me.; Silk Finishing Company of America, New York City; Somerville Mfg. Company, Somerville, Conn.; Winslow Bros. & Smith, Norwood, Mass.; Rhode Island Processing Co., Coventry, R. I.; The Wanskuck Co., Providence, R. I.; Mansfield Bleachery, Providence, R. I.; High Rock Knitting Co., Troy, N. Y.; American Woolen Co., Boston, Mass.; Boston Woven Hose & Rubber Co., Boston, Mass.; Hoosac Cotton Mills, Boston, Mass.

The Pierce-Arrow Motor Car Co.

BUFFALO, NEW YORK

MILFORD LIGHT AND POWER COMPANY
UNION SQUARE.

MILFORD, N. H. Feb. 9, 1915.

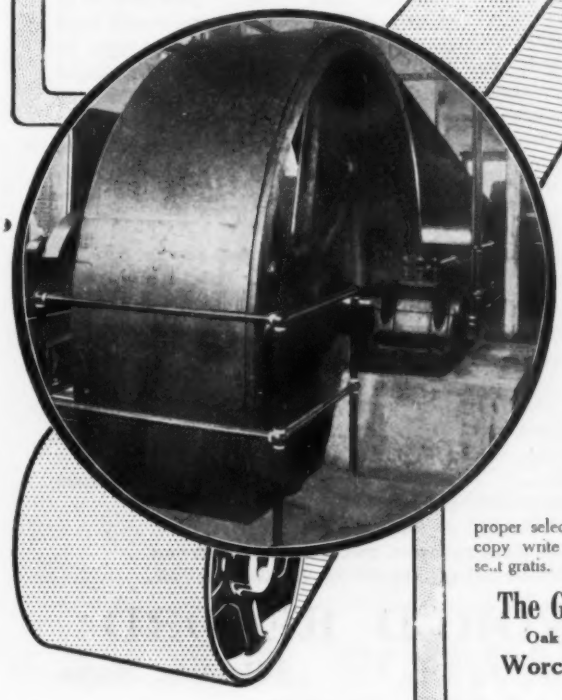
Graton & Knight Mfg. Co.,
Worcester, Mass.

Gentlemen:--
..... we have always found the service from your belts to be of the most satisfactory character.

Very truly yours,
Milford Light & Power Company,
AAM/B. C. A. Murray Supt.

Among other belts furnished these people is the 40" 3-ply Main Drive Belt shown below, which has always given, as Mr. Murray says—"Service of the most satisfactory character."

The true value of a belt is determined absolutely by its service. When you buy a G & K belt—whether Main Drive or the smallest Auto Fan belt—you always buy



BELT
plus
SERVICE

because we have never swerved from our original purpose to produce the best leather belting possible—belting possessing the essential qualities of pliability, firmness with minimum stretch, great tensile strength and durability. Remember:—there's a G & K belt for every drive and its use means maximum service.

The "Belting Manual" tells how to select belts and how efficient service may be derived after the proper selection has been made. If you haven't a copy write us on your letterhead and one will be sent gratis.

The Graton & Knight Mfg. Co.
Oak Leather Tanners and Belt Makers
Worcester, Mass., U. S. A.
Branches in principal cities

Go to Chicago With Your Ad Man

Attend with him the big Convention of Associated Advertising Clubs of the World, June 20 to 24, 1915

You will assimilate more knowledge of modern methods of Advertising, Selling, Distribution, and Management during these five days than could be obtained in a lifetime of book study.

You will be brought in touch with the men who have done and are now doing the big things of business. You will participate in the biggest business meeting the world has ever known. You will listen to the expressed thoughts of distinguished Americans concerning present day and future business movements.

You will enjoy Chicago's wonderful park system, boat rides on Lake Michigan, modern hotels, theatres, and other amusements, including the big street pageant, and the Gridiron Show given at the Auditorium Theatre by 150 Chicago Advertising men.

Distinguished Speakers. President Wilson, State conditions permitting, will head the notable array of speakers. Hon. William Jennings Bryan, George Horace Lorimer, Arthur Brisbane, John H. Fahey and Henry Watterson are among the others who will be heard.

Advertisers in and publishers of trade and technical journals will hold special Departmental meetings to discuss their own problems and learn how they can co-operate to better advantage. Other departmental meetings will take up such subjects as catalogues, engraving, printing, mailing lists, sales plans and kindred subjects.

The ladies are wanted too. Special entertainment—teas, luncheons, automobile trips, etc., is being arranged for them by Mrs. Chas. H. Porter and her committee.

Clear up your desk. Take a five days' vacation in a lake-cooled city. Mix with the business builders. You will return a better business man; a better physical man; and a better thinking man.

For further information, programme, rates, etc., address Convention Bureau, Advertising Building, Chicago, Ill.

TEXTILE WORLD RECORD

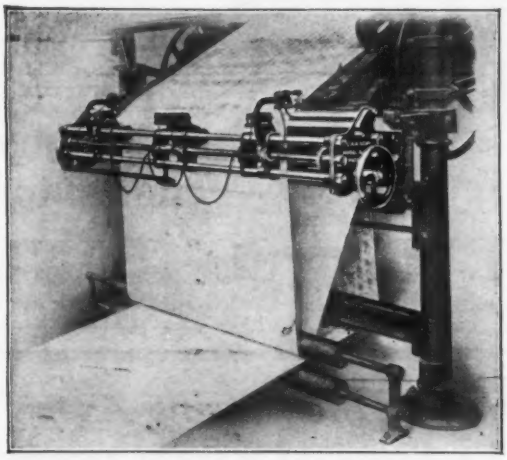
144 Congress Street **Boston, Mass.**

Member of the Audit Bureau of Circulations

Automatic Electric

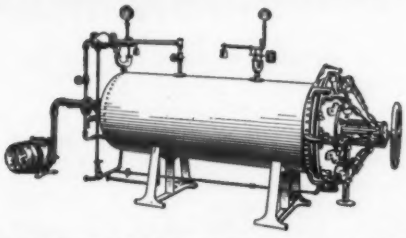
CLOTH FEEDERS

Over 1800 Running



For TENTERS, straight and swinging, CALENDERS, Etc.

100% to 200% Investment



DRY DECATING MACHINES for WORSTEDS or WOOLENS

These two machines are built in the United States and we can make prompt deliveries

L. H. A. SCHWARTZ & CO.

40 Central St., Boston, Mass.

Rotary Dyeing and Washing Machine

CYLINDER CONSTRUCTED WITH 2 OR 3 COMPARTMENTS

This new type of machine has proven a great success. The cylinder is built of all wood or non-corrosive metal, according to kind of work intended for.

All types of Dyeing and Finishing Machines for Hosiery.

SMITH DRUM & COMPANY

"Builders of The Best"

Southern Agent
H. G. MAYER, Realty Bldg., Charlotte, N. C.

PHILADELPHIA, PA.

The Economic Purchasing Agent Specifies

SHAMBOW SHUTTLES

"Why do you do this?" asked the Treasurer. "For various reasons," said the Purchasing Agent, including the following:

(*a*) Shambow Hand Threading Shuttles are sanitary and the weavers using them have better health with increased working capacity and less spoiled work.

(*b*) These shuttles reduce warp and filling troubles and reduce the stoppage of looms.

(*c*) On account of the Improved Marble Spindle they last 25 per cent longer and give 33⅓ per cent more service.

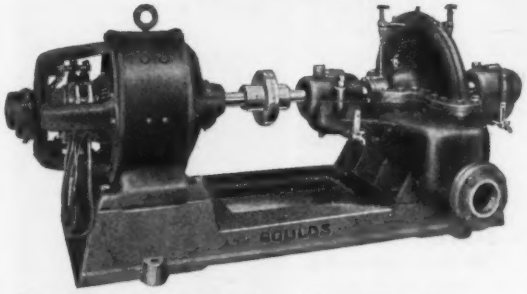
(*d*) Shambow Shuttles reduce our bobbin expenses because the spindles make it easy to doff the bobbin without clipping the base and there are special catches for ringed bobbins.

All these things tend to increased loom production with a low cost for shuttles. If you want these economies in your mill—just say the word and we will tell you how to get them.

Shambow Shuttle Co.

WOONSOCKET - RHODE ISLAND

You Get Both Low Installation and Low Maintenance Cost With



Goulds Double Suction Centrifugal Pump
Direct Connected to Electric Motor

GOULDS Centrifugal PUMPS

The single-stage, double suction type shown, is the simplest design of pump for heads up to 150 feet. For a given capacity the first cost and amount of floor space required for its installation are a minimum.

Its simplicity, together with Goulds Quality, insure reliability, service and low maintenance cost.

Send for Bulletin

THE GOULDS MANUFACTURING COMPANY

Main Office and Works, SENECA FALLS, N. Y.

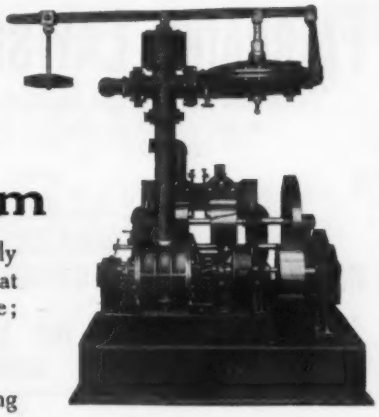
Branch Houses
Boston, New York, Chicago

District Offices
Atlanta, Houston

Best Singeing at the Least Cost

The Capacity of Your Gassing Machines may be Increased from 25% to 100% by Means of the

Kemp Automatic Gas System



employing ordinary city gas. This device is easily installed and delivers gas and air under pressure at absolutely correct mixture; produces a clean blue flame; singes thoroughly and uniformly.

It is equally effective for heating calenders.

Flame burns in confined space; is self-sustaining and combustion perfect.

Results Guaranteed
Furnished on Approval

THE C. M. KEMP MFG. CO.
405-413 E. OLIVER STREET
BALTIMORE, MD.

This mixture is regulated at machine instead of burners.

Mills use the KEMP AUTOMATIC GAS SYSTEM, making a big saving in gas consumption.

BIRCH BROTHERS

ALBERT BIRCH, TEXTILE MECHANICIAN

SOMERVILLE, MASS.

Starch Mangle.—This is the two-roll machine, with brass and rubber rolls. Mangles built with rollers of any material or number desired. Send for circular.

BIRCH TREE.

"Coronation"

Piece-End

Sewing Machine

Sent on trial most anywhere

Sews any fabric, thick or thin, wet or dry, without change

Fine Stitch or Coarse Stitch

Send for Circular

Also Makers of

Dyeing and Finishing Machinery

Scutchers, Openers, Folders, Crabbing and Soaping Machinery

FAIRBAIRN LAWSON COMBE BARBOUR LTD.

FAIRBAIRN MACPHERSON BRANCH— Wellington Foundry LEEDS.

LAWSON BRANCH— Hope Foundry LEEDS.

COMBE BARBOUR BRANCH— Falls Foundry BELFAST.

AND AT LILLE, FRANCE.

MAKERS OF MACHINERY FOR PREPARING AND SPINNING FLAX, HEMP, TOW AND JUTE,

AND ALL

MACHINERY for the MANUFACTURE of TWINES and ROPE YARNS.

SOLE MAKERS OF

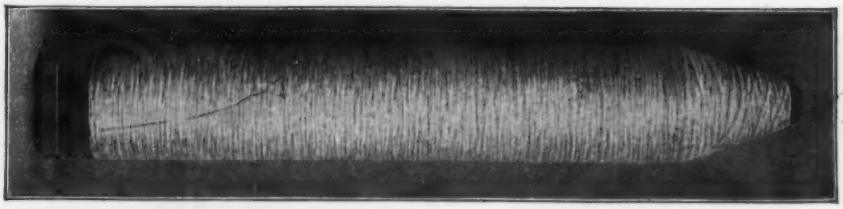
The Patent Centrifugal Flyer Cop Dry Spinning Frame

For Spinning Cops on the Bare Spindle.

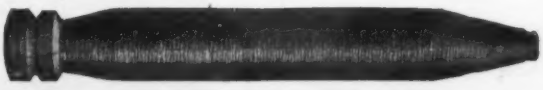
ALSO MAKERS OF

ENGINEERS' GENERAL TOOLS for RAILWAY and ORDNANCE PURPOSES, &c., STEAM ENGINES, GROOVED ROPE PULLEYS, SHAFTING, &c.

COMPLETE PLANS AND ESTIMATES FOR SPINNING AND WEAVING MILLS SUPPLIED.



SHUTTLE bobbins from seven-eighths to two inches in diameter and any length up to twelve inches. Suitable for all kinds of Duck, Upholsteries, Tapestries, Asbestos, Ratana, or any kind of fancy yarns for automatic or other looms.



OSWALD LEVER CO., Inc.

13th and Cumberland Sts., Philadelphia, Pa.

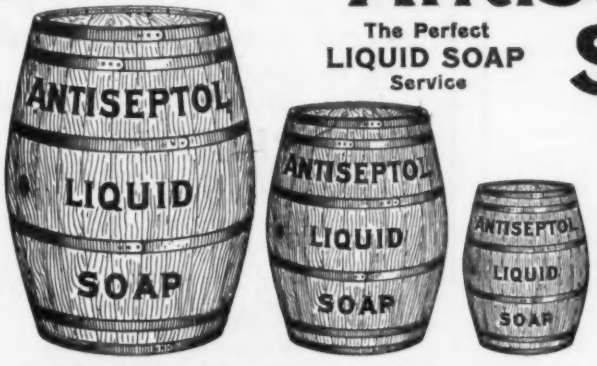
Manufacturers of Textile Machinery—Winders Especially

TEN YEARS OF SATISFIED PATRONS

MADE OF PURE
EDIBLE COCOANUT OIL
IN ONE QUALITY ONLY

"Antiseptol System"

The Perfect
LIQUID SOAP
Service



ECONOMY	EFFICIENCY	SANITATION
CHEAPER THAN CAKE SOAP	BETTER THAN CAKE SOAP	SAFER THAN CAKE SOAP

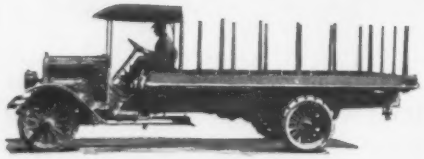
Keg (15 Gal.)	$1.00 per Gal.
Half Bbl. (30 Gal.)	.85 " "
Barrel (50 Gal.)	.75 " "
Five-Barrel Contract	.60 " "

ANTISEPTOL LIQUID SOAP CO.

564-72 W. RANDOLPH STREET, CHICAGO

World's Largest Exclusive Manufacturers of Liquid Soap

KisselKar Trucks Always on the Job



KISSELKAR Trucks are invariably spoken of by drivers and garage men as the best trucks they know.

And it's true that a KisselKar Truck is of better material, better built, better balanced than the average truck. It is a staunch, powerful dependable, scientifically constructed vehicle—**one that is always on the job.**

KisselKar Trucks are furnished in six sizes and with bodies to suit any business or special requirement. The loading capacities are 1500 lbs, 1, 1½, 2½, 3½ and 6 tons respectively.

KISSELKAR TRUCKS

Intelligent care is exercised by the Kissel Motor Car Company to furnish the *exact* truck needed by a customer.

Individual conditions, as well as those common to the line of business to be served, are minutely considered and advice given accordingly.

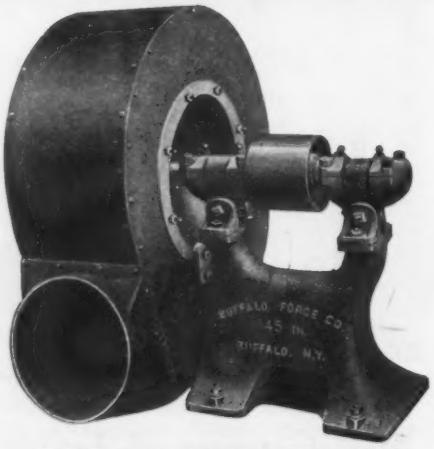
Write fully regarding your haulage problem—the mileage, the loads, the nature of cargo, the condition of roads, the number of stops, your present haulage equipment and all other facts that bear. ***And don't fail to ask for our illustrated portfolio.***

Kissel Motor Car Company

528 Kissel Avenue, Hartford, Wis.

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Cincinnati, Pittsburgh, Cleveland, Detroit, San Francisco, Los Angeles, Seattle, Buffalo, Rochester, Columbus and 300 other principal points.

You Have Long Felt the Need of an Efficient Fan for Cotton Gin Work



"Buffalo" Cotton Gin Fans

are of a special multiblade design—the result of recent extensive tests made by this company.

They will do the same work and

REDUCE POWER COST 25%

below that of any other fan used for this service.

Write Dept. 14

Buffalo Forge Co.

BUFFALO, N. Y.

Manufacturers of Heating, Ventilating and Drying Apparatus.

JOHNS-MANVILLE SERVICE
COVERS THE CONTINENT

JOHNS-MANVILLE Service is an evolution—the growth of half a century's endeavor to insure permanent satisfaction to users of J-M Products, of whatsoever kind. The sale of an article is not the end, it is really the beginning of J-M Responsibility.

J-M High Temperature Cement—Better Than Fire Clay——Makes the Brick Last Longer

The next time you shut down one of your boilers to build a new setting, take a good look at it. If the joints between fire brick have been eaten into so that the edges of the brick as well as the faces are exposed, your fire clay has gone back on you.

J-M High Temperature Cement won't act this way, it will correct your trouble. It will save the expense of shutting down and the loss of time in frequent setting renewals.

No. 31 J-M High Temperature Cement is made from highly refractory materials that seal the uneven surfaces between the bricks, protect the edges from the action of the flame up to 3100° thereby preventing the brick from being subjected to a "soaking" heat, which causes unequal expansion and contraction, spawling and disintegration.

When once you have used No. 31 High Temperature Cement for setting your fire brick you will always carry a supply on hand. It can also be used for patching and door jambs.

H. W. JOHNS-MANVILLE CO. New York and every large city

3031

SEND FOR

NEW CATALOG

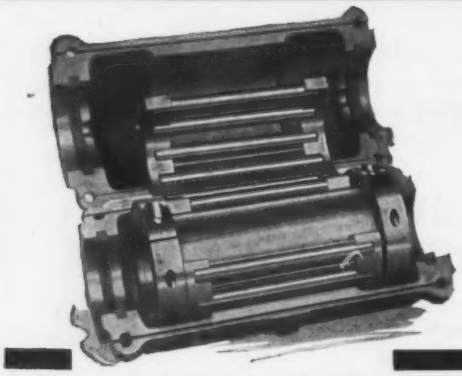
describing these new features—
Full head turn, handle release and check.

National Chapman Elevating Trucks

NATIONAL COUNTING MACHINES give the number of yards of cloth in an unknown quantity without figuring, weighing or machine attachment. May we tell you of this Machine also?

NATIONAL SCALE CO.

18 Record St., Chicopee Falls, Mass.



Lately each morning's mail has brought me expressions of satisfaction over "Sells" Roller Bearings, and orders and inquiries are steadily increasing in number.

I don't believe—so far as I can tell—that "war" booms have anything to do with it. People seem to be seeking for means to manufacture cheaply, to reduce costs, in these times of comparatively tight money.

People see "Sells" Bearings cut costs in every line of business—concerns like Bethlehem Steel Co., Dodge Brothers, Standard Oil Co., are mere examples.

This has given them heart for a few trial bearings, and invariably more or less complete equipment has followed.

A small investment in "Sells" Roller Bearings—particularly at this time—must be productive of gratifying results.

John D. Sells
Manager

ROYERSFORD
Foundry & Machine Company
56 North Fifth St., Philadelphia

Babitted Ring Oiling Bearings, Shaft Hangers, Collars and Couplings, Punches and Dies, Punching and Shearing Machines, Sensitive Drill Presses, Foot Presses, Grinding and Polishing Machines, Tumbling Barrels, "Rollerine," the ball and roller bearing lubricant.

"SELLS"
Roller Bearings

MORE THAN
2300

MORE than 2300 S. & U. Centrifugals are now in actual service—hundreds of them in textile mills.

These mills have proved by experience that S. & U. Centrifugals are the most efficient means for separating water, dyes, etc. from textile materials.

Have *you* investigated their possibilities for your own plant?

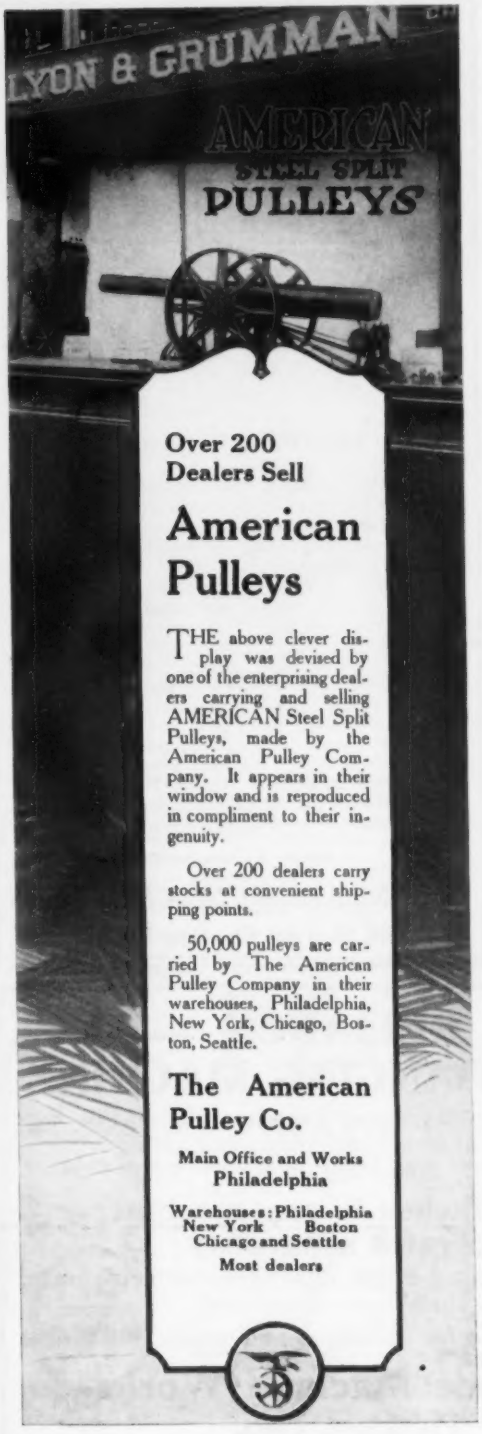
Schaum & Uhlinger
Centrifugals

There is a great deal of information and interesting data about centrifugals in our free book "Centrifugal Extraction."

It also contains descriptions of S. & U Centrifugals of all sizes and types.

Write for a copy today. Outline your separation problems to us, and we will advise you as to the type and size best for the purpose.

Schaum & Uhlinger, Inc.
Glenwood Ave. and Second St.
Philadelphia



Over 200
Dealers Sell

American Pulleys

THE above clever display was devised by one of the enterprising dealers carrying and selling AMERICAN Steel Split Pulleys, made by the American Pulley Company. It appears in their window and is reproduced in compliment to their ingenuity.

Over 200 dealers carry stocks at convenient shipping points.

50,000 pulleys are carried by The American Pulley Company in their warehouses, Philadelphia, New York, Chicago, Boston, Seattle.

The American Pulley Co.

Main Office and Works
Philadelphia

Warehouses: Philadelphia
New York Boston
Chicago and Seattle

Most dealers

This is What S.K.F. Ball Bearings Will Do

FOR your Shoddy Pickers or other machinery, they will save the greater part of the power used, avoid delays, hot boxes, oil drippings and binding. In a recent test shoddy pickers mounted on plain bearings handled about 1000 pounds of stock in ten hours. Same machine equipped with S.K.F. Self Aligning Ball Bearings will handle 1800 pounds.

If you want to save money equip your machines with S.K.F. Ball Bearings. Catalog No. 14-M explains fully.

SKF BALL BEARING CO.

50 Church St., New York

Mail this Coupon Now

Without obligation please send me special catalog No. 14-M on Ball Bearings as applied to Textile Machinery.

Name .....

Address .....

State ..... 6-15 T.W.R.

SILK
and
WOOL

We are the leading builders of

Special Machinery

for the treatment of

Silk and Wool Fabrics

National Textile Machine Company

of

North-Paterson, N. J.

Sole Agent

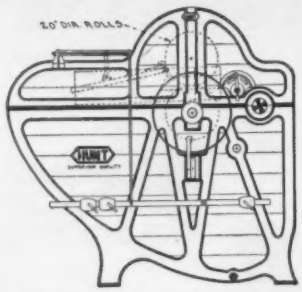
A. W. BUHLMANN

Textile Engineer

200 Fifth Ave. **NEW YORK**

LATEST MODEL

TYPE M Double Braced Fulling Mill



The Mill with the **7 Exclusive** Features

Side Frames with M-Cross Braces giving greater strength and providing for much more secure fastening of side frames. Outside Compound Weight Arms controlling pressure of Packing Box Covers. Instantly adjustable from lightest to heaviest loads. Heavy Keyed Packing Box Levers outside of mill and connecting downward directly onto Covers with greatest leverage. Most effective Packing Box Construction with brass "wear strips." Adjustable bottom boards. Extra heavy design. Trouble Proof Bearings preventing oil stains. Self-aligning, assuring free running at all times. Stop Motion Frame counterbalanced, allowing instant adjustment to operate by lightest tangle or heaviest knot, as required. Fitted with positively reliable Friction Clutch Pulley of such simple design and construction that the most skeptical operators prefer after once using.

Ask for Bulletin 302-M

RODNEY HUNT MACHINE CO.

86 Mill St., Orange, Mass.

RELIANCE CLOTH HANGING MACHINE

For shrinking woolen, worsted and cotton goods; drying oilcloth, or waterproof cloth, and curing rubberized cloth.

Can be attached to any machine or operated separately

In use by the United States Quartermaster department for shrinking uniform cloth.

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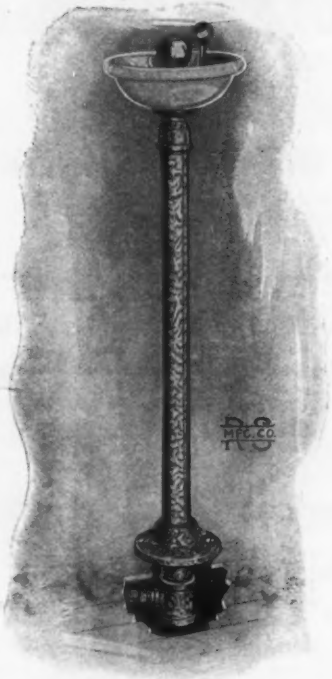

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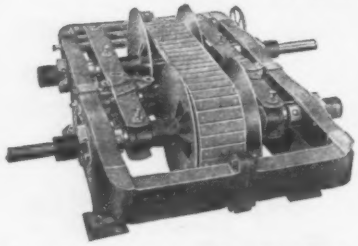

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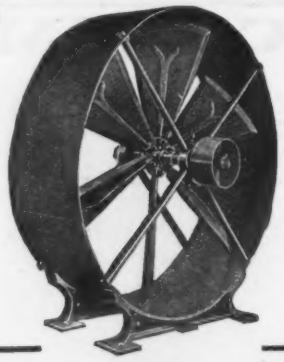

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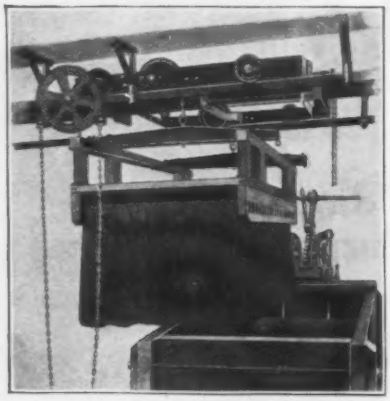

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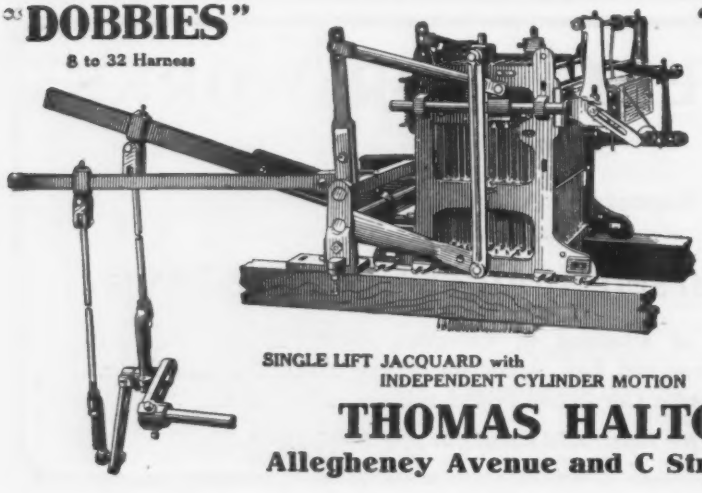

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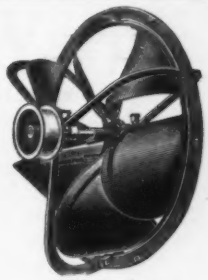

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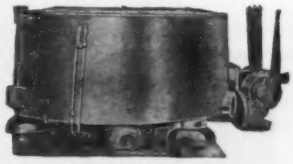

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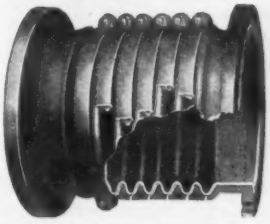

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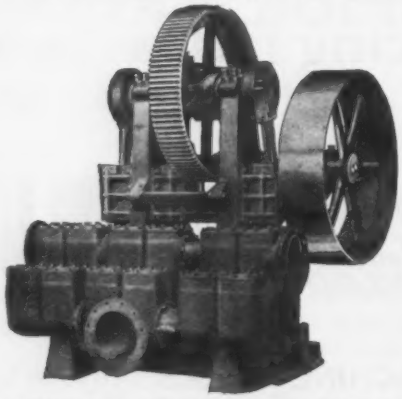

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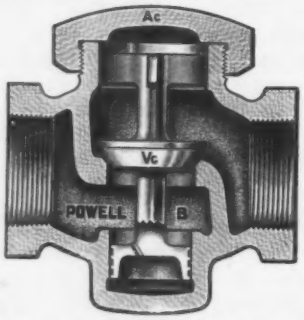

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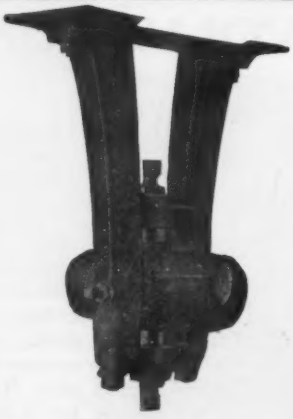

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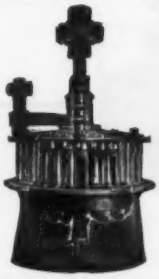

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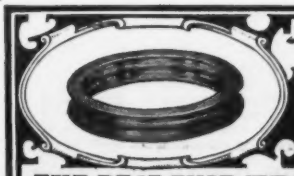

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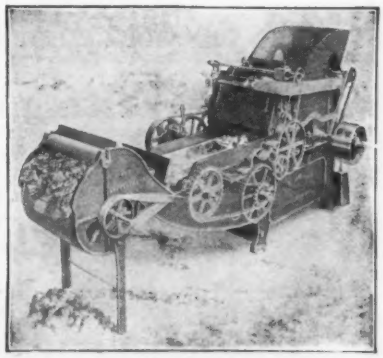

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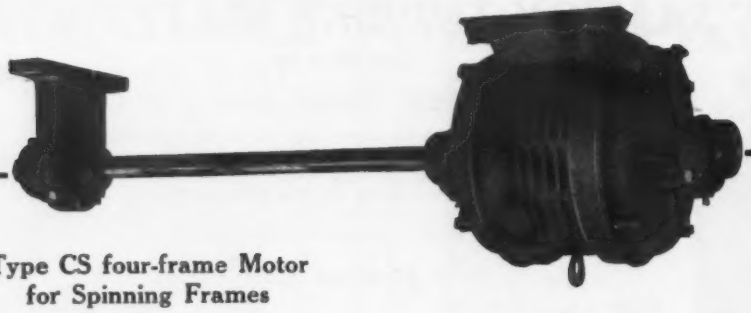

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A Complete Directory of Cotton, Woolen, Knitting, Silk, Flax and Jute mills of the United States and Canada, together with the Dyeing and Finishing Works, Bleacheries, Print Works and other Textile Establishments; about 7,000 in all. Full information is given about each mill in almost every instance, viz., the name of the company or firm, names of officers, agent, superintendent, the character of goods made, the machinery equipment, i. e., the number of sets of cards (or combs), the number of spindles, number of looms; whether the mill uses steam or water power, whether there is a dye house or not, the names of the selling agents or if the mill sells direct. All this and much other information contained in this book is arranged in a way to be instantly accessible.

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Indanthrenes Unfortunately, however, Indigo produces only a Blue, while the trade requires every shade in fast and brilliant colors. To Dr. Rene Bohn, Director ot the Badische Antlin-& Soda-Fabrik, Ludwigshafen a/Rhein, should be given credit for the discovery of the series of dyestuffs derived from Anthracene, known as Indanthrene Dyes, which produce fast colors in every desired shade and tone. The introduction of these dyes in the cotton industry has created a new standard for fastness and brilliancy, in which combined respects they excel any colors heretofore known. Indanthrenes are actually permanent while the fibre lasts, meeting therefore every trade requirement, a fact so well demonstrated that today the word "Indanthrene" (pronounced In-dan-threne) is synonymous with "Fast Colors." There is probably no factor of greater importance in the manufacture of cotton goods than the fastness of the colors, in that it constitutes a most attractive selling argument, increases their popularity, and broadens the market for them.

BADISCHE COMPANY

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Correspondence

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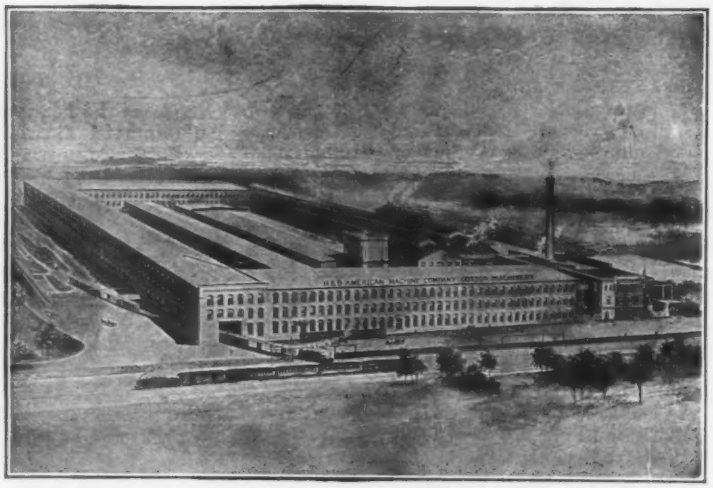

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TEXTILE WORLD RECORD

JUNE, 1915

Monthly Comment.

Preparing American Wool for the Market

The improved method of preparing Wyoming wool for the market which has been introduced at Rawlins, Wyoming, is full of promise for the development of wool growing in the United States. The prospects of success are the brighter because the mistake of trying to do too much has been avoided. The old method has been to pack the wool in bags or bales as it comes from the sheep regardless of grade and condition. The Rawlins method consists in separating the fleeces into grades and packing each grade in neat, compact bales, each plainly marked to indicate the kind of wool it contains. The surprising feature of the improvement at Rawlins is not that it has been adopted, but that the preparation of American wool for the market should have been neglected to such an extent as to make this common sense step necessary in the year 1915.

An illustrated description of the Rawlins method of packing wool for the market appears in this issue, taken from the National Wool Grower, the organ of the National Wool Growers Association. The movement to improve the condition in which American wool is sent to market should be extended to every part of the country. Already the work done by the two shearing plants at Rawlins has stimulated the wool growers of the vicinity to follow their example. This is shown by the following extract from a letter received recently from John J. Cullen, the manager of one of the shearing plants at Rawlins which have adopted the improved method:

> I have your letter of the 20th inst. in reference to the new method of preparing wool for market at our shearing plant. I wish to say to you that we not only put our wool up in a much better way for the market, but we have brightened the minds of all sheep men in this country that have visited our plant this season. I must say that we sheep men did not know the value of our wool, nor did we know that instead of breeding our sheep so they would produce a good grade of wool in some instances we were breeding to an inferior grade. Now that our wool is graded and baled every grade to itself we can readily see that we need to improve our wool.

In order that complete success may be attained, it will be necessary for the wool buyers of the country to give substantial encouragement to the enterprising wool growers who have taken this step forward. The wool that is carefully graded and packed in the West should have the preference in the markets of the East. This result can be brought about by making the improved method known to all the wool buyers of the country in order that they may compete for what the Rawlins shearers call the "American system" of packing.

The country is having a most convincing object lesson as to the danger of depending on foreign countries for the necessary supply of wool. At the present time the American people are obtaining about half of the

wool for their clothing by permission of the British Government. As a war measure no exception can be taken to this regulation of the embargo, but the condition of industrial dependence which makes such a situation possible should be changed. The domestic clip should be developed to supply more nearly our requirements. To attain this object it is necessary to produce wool in the United States by the most improved methods and to protect both wool growing and wool manufacturing by an adequate tariff against foreign competition.

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The Mills Bill and the Merchandise Marks Act

On May 10, Gov. Whitman, of New York, signed the Mills bill, which is designed to prohibit false and fraudulent advertising of merchandise and real estate. The new law is as follows:

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Section 421 of chapter 88 of the laws of 1909, entitled "An Act providing for the punishment of crime, constituting chapter 40 of the consolidated laws," as amended by chapter 759 of the laws of 1911, chapter 321 of the laws of 1912 and chapter 590 of the laws of 1913, is hereby repealed, and in its place there shall be a new section 421, to read as follows:

Sec. 421. Untrue and misleading advertisements. If any person, firm, corporation or association, or agent or employe thereof, with intent to sell or in any wise dispose of merchandise, real estate, service, or anything offered by such person, firm, corporation, or association, or agent or employe thereof, directly or indirectly, to the public for sale or distribution, or with intent to increase the consumption thereof, or to induce the public in any manner to enter into any obligation relating thereto, or to acquire title thereto, or an interest therein, knowingly makes, publishes, disseminates, circulates, or places before the public, or causes, directly or indirectly, to be made, published, disseminated, circulated, or placed before the public, in the State, in a newspaper, magazine or other publication, or in the form of a book, notice, circular, pamphlet, letter, handbill, poster, bill, sign, placard, card, label, or tag, or in any other way, an advertisement, announcement or statement of any sort regarding merchandise, service or anything so offered to the public which contains any assertion, representation or statement of fact that is untrue, deceptive or misleading, or that amounts to an offer to sell, barter or exchange real estate, by means of prizes, rewards, distinctions, or puzzle methods, such person, corporation or association, or the members of such firm, or the agent of such person, corporation, association or firm, shall be guilty of a misdemeanor, punishable by a fine of not less than $25 nor more than $1,000, or by imprisonment for not more than one year, or by both fine and imprisonment.

Sec. 2. This act shall take effect Sept. 1, 1915.

The Mills bill in some respects bears a close resemblance to the British Merchandise Marks Act, which has worked so well in Great Britain in preventing fraud and misrepresentation in the sale of goods.

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The War and Foreign Trade

The report of textile imports and exports for the nine months ending March, 1915, includes the eight months since the European war began on Aug. 1, 1914, and by comparison with previous years shows some of the effects of that catastrophe which has been the controlling influence in international trade, creating conditions under which the tariff and established methods of exchange have been all but negligible factors. The shrinkage of nearly $16,000,000 in the value of cotton goods imports as compared with 1914, was due to the decline in the importation of laces and embroideries, which in turn was the result of the demoralization of the lace industry in Belgium and France. The disarrangement of trade with Europe and India is also reflected in the decrease of $12,000,000 in the imports of raw fibers, such as flax, hemp and jute, and of $13,000,000 in the imports of manufactures of fibers.

The silk trade shows a loss of $16,000,000 in the imports of raw silk, and $9,000,000 in the importations of silk goods.

In spite of the fact that wool has been the subject of such widely discussed restrictions, our imports of that staple increased by $5,600,000 as compared with the corresponding period of 1914, while manufactures of wool show an increase of over $3,000,000.

The exportations of textile materials bear even more marked evidence of the effects of hostilities. Raw cotton exports show a loss of $244,821,634 as compared with 1914, this being the result of a decline of 36 per cent. in the price per pound, which declined from 12.9 cents in 1914 to 8.3 cents in 1915, and of 15 per cent. in the quantity exported.

which dropped from 4,200,000,000 pounds in 1914 to 3,569,000,000 pounds in 1915. Exports of cotton goods jumped $12,000,000, a result made possible by the crippled condition of our foreign competitors. Manufactures of fibers and silk show slight changes, but the most striking effect of the war on our foreign trade is found in the increase of the exports of wool goods from $3,492,438 in 1914 to $20,798,970 in 1915, the last named amount being equal to 80 per cent. of the wool goods imports for the same period. This increase is doubtless due to the delivery of goods for clothing the armies of the Allies, and shows to what an extent the tariff has been temporarily side-tracked during the war.

The textile imports for the 9 months ending March are summarized as follows:

IMPORTS

	1913	1914	1915
Cotton:			
Unmanufactured	$19,069,801	$10,734,564	$14,808,289
Manufactured	53,466,482	56,251,429	36,996,972
Fibers:			
Unmanufactured	38,098,747	39,884,753	27,505,126
Manufactured	57,350,224	61,689,358	48,497,214
Silk:			
Raw	66,170,399	76,022,345	60,804,102
Manufactured	21,696,693	28,480,268	19,210,463
Artificial silk Yarn and goods	2,634,675	3,064,124	2,858,532
Wool:			
Raw	29,712,189	31,862,896	37,409,948
Manufactured	13,035,200	22,468,811	25,790,439

EXPORTS

	1913	1914	1915
Cotton:			
Unmanufactured	471,217,371	542,294,733	297,473,091
Manufactured	38,930,493	39,038,030	51,135,775
Fibers:			
Manufactures	8,134,791	9,637,990	7,481,558
Silk Manufactures	1,836,784	1,686,880	1,914,020
Wool Manufactures	3,365,646	3,492,438	20,798,970

The European Textile Industry

ADVANCE IN COST OF FINISHING

The gravity of the situation in the German textile industry is indicated by a circular letter from the "Veredelungsanstalten fuer baumwollene Gewerbe" an association whose members are engaged chiefly in dyeing and finishing imported textile materials for export. The circular reads as follows:

Unfortunately we are compelled to notify the trade that our prices will be increased by an additional 10 per cent. on April 15. The causes for this advance are well known to our customers and we, therefore, confine ourselves to the statement that from April 15 the total advance in prices will amount to 30 per cent. This 30 per cent will be added to the net amount of each invoice, including the cost of papering and packing. It will apply to all material received after April 14. We take this opportunity of calling attention to the fact that the difficulties in obtaining finishing materials of all kinds instead of decreasing, have actually become much greater. It is impossible to obtain the necessary quantity of starch for our work.

COTTON GOODS IN AUSTRIA

The Association of Austrian Cotton Weavers, with headquarters at Vienna, have notified the trade of an advance in the prices for cotton goods, the following being an extract from the circular letter:

The members of the fancy goods section of the Austinian Association of Cotton Weavers in combination with the Hungarian firms engaged in the same branch of trade, have decided to advance the price for both white and colored goods for the next winter's season on an average of 25 per cent. War conditions have caused an advance of 50 per cent. in the price of yarn and also an increase in the cost of finishing materials and other items in the cost of production. For goods now selling under 50 heller per meter (9 1/3 cents per yard), a greater advance in the price must be put in force, owing to the greater quantity of yarn required for this class of goods.

A GERMAN VIEW OF THE AMERICAN WOOL TRADE

The "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie" in a recent issue prints the following letter from a German textile manufacturer now traveling in America. It is of interest as showing how the business conditions in the United States in these troubled times impress a German manufacturer:

England has not only declared wool to be contraband, but also requires guarantees that all goods shipped to neutral countries shall not be forwarded to Germany. England also interrupts the trade in goods of German origin. As a result commerce between neutral states has been brought to almost a complete standstill, a condition that England cannot maintain indefinitely as all countries are very seriously affected. Insurance against seizure by English war ships can no longer be obtained. War insurance and freight rates have reached unprecedented heights, more than ten times the regular rates. Even the United States which has been disposed to endure everything from England has found it necessary to protest against this interference with neutral vessels, but it cannot be predicted how long the negotiations will be prolonged. In the meantime America is doing a rushing business in arms, military clothing, shoes and other articles. From Russia alone

orders for nine million yards of army cloth and from France seven million meters of army cloth have recently been received. The ocean liner "La Touraine", on which a fire recently broke out in mid-ocean, but which to our great regret was not destroyed, carried over 3,000 cases of munitions of war and 150 machine guns. The hope now is that the financial disadvantages resulting from the English embargo will outweigh the advantages resulting from this trade in war materials. Only when America feels in her pocket-book the stagnation of trade with Holland, the Scandanavian countries and Italy will she give the necessary emphasis to the protest against English methods.

The English plan to cut Germany off from all supplies of wool, particularly from the English colonies, has created a peculiar condition here in America and caused serious difficulties for American manufacturers. England recently declared an embargo on the shipment of wool from her colonies. After some negotiations this embargo was temporarily lifted, but wool intended for America must be shipped via London. Aside from the difficulty in getting transportation from the colonies, this proviso regarding a shipment via London, where the docks are choked with all kinds of goods, has made it so difficult to import wool that the first wool from the September and October sales has only reached here at the close of the auctions. As a result the stock of wool is so small in the United States that prices have undergone an enormous advance, scoured wool selling temporarily at 80 cents a pound, an advance of about 80 per cent. as compared with the quotations in September and October. Under the shipping conditions laid down by England, American manufacturers must have their wool consigned to a Textile Alliance under English control and give a guarantee that the wool imported through the Alliance shall not be exported. This is a guardianship of trade which is most humiliating for a country like America. The Gentlemen at Washington appear to be entirely satisfied with the arrangement. They were so indignant over the German declaration of a blockade that many journals discussed the possibility of a war with Germany. They have, however, come to an arrangement regarding this matter and Germany during this period has not sunk any American vessels in English waters. America, however, offers no protest against England's stopping commerce with neutral countries. It is, alas, only too true that we are dependent on America for a supply of cotton, copper, grain and many other products. We also depend upon America for a market for a large number of our manufactures, but it is fervently to be hoped that the day will come when we can show America that the thousands of German soldiers that have been mangled by American bombs and wounded and killed by American bullets have not been forgotten and that America in this war has been among our worst enemies.

WOOL AND COTTON YARN PRICES IN GERMANY

The "Deutsche Wollen-Gewerbe" gives the official report of the German Government on the course of prices in Germany for wool and cotton yarn during the year 1914. Following is an extract from this report, showing the price in January, the highest price for the year and the price in December. The prices are given in cents per pound.

	Jan.	High.	Dec.
No. German wool at Berlin	$.41	$.70	$.70
Buenos Ayres wool at Bremen	.49	1.13	1.01
So. German wool at Munich	.36	.57	.57
36s cotton warp at Augsburg	.23	.25½	.25½
20s cotton warp at Augsburg	.19	.27	.27
8s mule spun at M. Gladbach	.16	.22	.22
12s ring spun at M. Gladbach	.18½	.27	.27

No quotations on raw cotton are given for the last five months of the year. The maximum prices for wool were put into effect in Germany on Dec. 22, 1914.

TEXTILE WEIGHTS AND MEASURES IN GERMANY

The "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie" in a recent issue states that the Saxon-Thuringian Association for Trade and Industry have petitioned the Government to prohibit the use of English weights and measures for yarn and sewing thread:

> The Saxon-Thuringian Association for Trade and Industry has forwarded to the Chamber of Commerce at Plauen a petition that will be presented to the Imperial Government asking that German spinning and thread mills market their products only by German weights and measures and that a law be passed forbidding the further sale of such products by English weights and measures. This petition was also submitted to the Bundesrat.

The regulation of weights and measures in wholesale and retail trade with the public is a comparatively easy task, because the police officers can readily inspect the stores and detect violations of the law. Nevertheless, as this item from the German paper shows, Germany has up to the present time failed to make "German weights and measures" the single standard even in this field. It may be possible to bring about this result now that the war has aroused such an intense hatred of things English, but even if that should be accomplished, English weights and measures will continue to be the predominating standard for the manufacture of German cotton yarn and thread because of the use of machines based on the English sytem.

TRADE BETWEEN SAXONY AND THE UNITED STATES

The "Wochenenberichte Leipziger Monatschrift fuer Textil-Industrie" makes the following comment on the trade between Saxony and the United States since the war began:

Our ability to contend with war conditions is being revealed to an astonishing degree not only in general industry, but also in the export trade. Dr. Stresemann, a member of the Reichstag and also of the Association of Saxon Manufacturers, in a public report recently stated that since the war began Saxony has retained 60 per cent. of her ordinary value of trade with the United States in times of peace. There has been an adequate importation of raw materials. This situation is more noteworthy in view of the following conditions:

1. Only 60 per cent. of the operatives ordinarily employed in the mills have been available during the war.
2. A large part of the production in Saxon industries has been required for war purposes.
3. The export of many products is forbidden and that of others is restricted by stringent regulations.
4. England since the war began has been able to hold only 40 per cent. of her export trade.

It, therefore, appears certain that we have succeeded in gaining a portion of England's trade. To this extent the English have shown themselves unable to compete with the Germans in spite of the more favorable position which they occupy.

FRAUD IN GERMAN ARMY CONTRACTS

The "Zeitschrift fuer die Gesamte Textil-Industrie" recently reported a case in which a government contractor at Mainz, Germany, was convicted of fraud in supplying the army with woolen stockings. He was sentenced to imprisonment for eight months and his representative to fifteen months in the penitentiary. It was proved that 140,000 pairs of stockings delivered to the army by the defendants were not equal in quality to the sample. The court decided that the delivery of an inferior quality of clothing to the army was an injury to the troops and should be treated as treason.

The imports into Sweden of cotton, woolen, silk, and linen cloth showed a considerable decline for the year. The exports of cotton yarn, on the other hand, increased from 1,050,943 pounds in 1913 to 1,477,979 pounds in 1914; woolen yarn, from 456,092 to 598,151 pounds; and woolen cloth from 356,355 to 785,111 pounds.

The Dyestuff Situation in the United States

Since the war began last August the Department of Commerce has been actively engaged in efforts to promote the production of dyestuffs in the United States and to keep the trade informed as to the situation. The latest evidence of this activity comes in the form of a report by Thomas H. Norton, special agent of the Department, regarding the actual and prospective supply of dyestuffs on May 15, and from which the following is taken:

With each added week since the shipment of German dyes has been placed under embargo, and each successive indication that a lengthy period must probably elapse before the customary machinery of supply can again be set in motion, there has been a steady growth in the feeling throughout wide circles that the time is ripe for our American coal-tar chemical industry to expand from its present very modest proportions to a position where it can become the dominant factor in meeting the needs of sister industries.

This conviction is finding practical expression in a variety of directions. A review of what is being done shows clearly that not only is every effort being made to meet the urgent demands of a critical situation, but that the foundations are being laid for the more permanent evolution, along natural and healthful lines, of a distinctly American color industry, using American raw material, and meeting the bulk of American needs.

The three phases of the complete industry are the production of coal-tar "crudes," of "intermediates," or semi-manufactured compounds, and finished dyes. Along all three lines pronounced progress has been made during the last few months.

MANUFACTURE OF COAL-TAR CRUDES

The erection of adequate recovery plants in connection with coke works is making rapid progress. In addition to a list of such plants given in Commerce Reports for April 20, 1915, mention may be made of the new Laclede Coke Works at St. Louis, built at an expense of $2,000,000. Active operations begin June 1. The daily consumption of coal is 1,000 tons. Ample provision is made for the collection of by-products. The large Zenith Coke Works at Duluth have recently completed the installation of a benzol-recovery plant. Within a few weeks the daily output of benzol from American coke works will exceed 50 tons. Inquiries made at the Bureau of Foreign and Domestic Commerce regarding constructors of by-product recovery apparatus show that there is a widespread interest in stopping the current wastage of a valuable by-product and in insuring an increased supply of raw material for the use of dyestuff manufacturers.

Under ordinary circumstances this rapid development in the output of benzol, naphthalene, and the other important crudes would have meant an oversupply. As it is, the demand for benzol and

for toluol in the manufacture of high explosives, chiefly in the forms of picric acid and of trinitrotoluol, has become so pressing that the current prices for the two hydrocarbons, when not covered by contract, are at least quadruple those prevailing a year ago.

This circumstance hampers to some extent the efforts of those engaged in the manufacture of intermediates. The price of naphthalene, also, has rapidly risen during the last few months. Before the war two-thirds of our current consumption was imported from Great Britain and Germany. It is probable that with the steady expansion of by-product recovery plants in the coke industry and the enlargement of the facilities in the works for separating and purifying the various crudes, prices will now begin to fall, at least for benzol and naphthalene.

PRODUCTION OF INTERMEDIATES

The manufacture of intermediates is actually the most difficult part of the whole problem connected with the dyestuff industry. The production of finished dyes from the various intermediates is in most cases relatively much simpler than the transformation of crudes into intermediates. Hitherto American makers of artificial dyestuffs have depended almost exclusively upon intermediates of German origin. Since the outbreak of the war in Europe it has become clearly evident that the manufacture of the leading intermediates on a generous scale is necessary to the continued activity of American dyestuff plants and the evolution of an independent, self-contained industry.

The most important intermediate is aniline. The equipment of a large plant for the manufacture of this product by the Benzol Products Co. has been the most important factor in the situation. The output of the works at Frankford and Marcus Hook, in Pennsylvania, is now sufficient to meet the needs of American dyestuff makers. The Edison Co. has likewise established a large plant for the production of aniline at Orange, N. J. It is in active operation and will be enlarged.

The E. I. du Pont de Nemours Powder Co., of Wilmington, Del., has acquired the large works of the Bayway Distilling Co. at Elizabeth, N. J., used for rectifying and preparing pure benzol and toluol, and has arranged for manufacturing aniline from such benzol as may not be required in the production of high explosives.

At Elizabeth, also, the Midvale Chemical Works of St. Louis is erecting a large plant destined for the manufacture of aniline and other intermediates, and ultimately of finished dyestuffs. The plans are extensive and include separate buildings for each product.

It is plain that very ample provision is being made for the production of aniline on a large scale. There will be an adequate supply for manufacturers who are engaged in the preparation of more complex intermediates derived from aniline—dimethyl-aniline, etc.—and of the aniline dyes made from them. There will also probably be a large amount of aniline salt available to use in dyeing aniline black.

NATURE OF CONTRACTS FOR INTERMEDIATES

The output of these aniline works is largely contracted for ahead. A typical contract runs for three years, beginning with July 1, 1915. The buyer fixes in the month of May, preceding each year, the amount of aniline required monthly, during the 12 months commencing July 1. This amount may be increased or diminished in any month by the buyer to the extent of 5 per cent. He may not increase his monthly average for an ensuing year by more than 10 per cent., except at the option of the seller. Subject to these conditions the buyer purchases from the seller all aniline oil to be used by him during the three years. The price may vary between 10.93 cents and 25 cents per pound during 1915, and between 10.93 and 15 cents after Jan. 1, 1916. It is to be regulated "by the fair, average market price in the United States, as the same may be determined by competitive offerings and sale." The contract embodies the terms of cooperative effort, which it is intended will lead to the establishing in the United States of a coal-tar chemical industry. It is entered into by the buyer with the intent of furnishing the seller with a firm outlet, at a fair price, for a large portion of his production during the currency hereof, and with a view of encouraging the seller to embark and continue in the manufacture of aniline oil and other derivatives of crude benzol on a large and permanent scale; and in order that the buyer may derive the benefits consequent upon securing at a fair price an ample, adequate, and permanently regular supply of prime aniline oil of domestic manufacture on a preferential basis."

A contract of this kind appears to be regarded as well adapted to meet the exigencies of the situation, and has been readily accepted by users of aniline. It relieves dystuff manufacturers from the responsibility of providing their most important intermediate, and leaves them free to concentrate their efforts upon products of a more complex nature, involving a higher grade of technical skill, and operations of a more difficult character. At the same time the American aniline industry has three years' leeway to establish itself so firmly that it may easily resist all foreign competion of a legitimate character.

Aniline was sold in American markets at 10 cents per pound a year ago. Evidently a minimum of about 11 cents is regarded as the lowest price at which it can be produced in this country at a fair profit.

OTHER INTERMEDIATES

The American manufacturers of coal-tar dyes have taken up seriously the production of those intermediates needed to make the more important colors which they have hitherto furnished to the American trade.

The Schoellkopf, Hartford & Hanna Co., at Buffalo, the oldest and largest of the American establishments, started last autumn extensive preparations in this field. It has now seven complete plants for the preparation of various intermediates. The attempt has not been made to produce at once all the intermediates that were formerly imported from Germany. A sufficient variety, however, is now in regular process of manufacture to enable the company to produce regularly such colors as formed the bulk of its output before the war.

This policy is evidently dictated by the circum-

stances, which plainly require in the interests of American consumers that there should be a maximum output in the shortest time possible of a small group of recognized staple colors.

Essentially the same policy has guided the activity of the smaller plants. The W. Beckers' Aniline & Chemical Co. at Brooklyn, is erecting 23 buildings in its new plant. Of these, 7 are completed and manufacturing operations have already been started. This firm will make all of the intermediates required in the production of the group of dyes that it carried on successfully before the war.

The same is also true of Heller & Merz and of the Central Dyestuff Co., at Newark, N. J. Each of these two firms is erecting commodious new buildings and starting the manufacture of the intermediates formerly imported from abroad.

In addition, two new companies have been organized for the manufacture of coal-tar products, the American Synthetic Color Co., at Stamford, Conn., and the Standard Aniline Co., at Wappingers Falls, N. Y. Both have well-equipped plants and have already begun the manufacture of intermediates, delaying for the time any attempt to turn out finished dyes.

The more important intermediates hitherto imported from Germany and now being manufactured regularly in the United States are:—Aniline oil and salts, A and B napthols, Para nitraniline, Dinitrobenzol, Dinitrotoluol, Toluidine, Nitrotoluidines, Toluylenediamine, A and B naphthylamines, Phenylenediamine, Phthalic acid, Acetylsalicylic acid, Salicylic acid.

The names of the intermediates are arranged in the order of the extent to which they have been imported, anline leading the list.

It is also of interest to know that one manufacturer has found it feasible to make a very satisfactory grade or dinitrochlorbenzol, the all-important intermediate for the production of fast sulphur black, a dye now used in vast amounts in this country, especially for hosiery.

OUTPUT OF FINISHED COAL-TAR DYES

Of prime importance to the numerous categories of consumers of dyestuffs is the question, How far will American color works be able to meet the deluge of demands as the date approaches when the supply of German-made dyes will be entirely exhausted?

There is no question but that, from now on, each day will see an increased output of American-made coal-tar colors.

The large works at Buffalo are now running night and day, busying 600 operatives. The volume of the output is already double what it was before the war. Manufacture is concentrated upon a few staple dyes, chiefly in demand, the lack of which would be felt most severely by the great textile interests. This firm has brought out a direct black, capable of replacing satisfactorily, as far as quality is concerned, both aniline black and sulphur black. It is felt that the use of this dye, along with the rapidly increasing output of aniline available for aniline black, will go far to lessen the hardships attendant upon a complete disappearance of German-made sulphur blacks from the market.

The smaller companies at Newark are straining every nerve to bring their output up to the normal amount manufactured regularly before the war and hope soon to advance far beyond those figures.

It will probably require more than two months for the Brooklyn plant to attain the volume of output customary before the war and before the disastrous explosion and fire of last autumn. There is every indication that these works will rapidly expand and become an important factor in the situation.

E. C. Klipstein of 644 Greenwich St., New York City, is meeting with success in establishing the manufacture of the oldest sulphur color, Cachou de Laval, a fast brown susceptible of many applications, and is extending operations to other sulphur colors.

The American Branch of the famous Bayer Co., one of the leading German dystuff firms, is located at Rensselaer, N. Y. It has been practically closed for some months, but will resume active operations on July 1. Prior to the war the firm manufactured nigrosines, alkali blue, and a few other colors especially in favor in the American market. The intermediates required were imported from Germany. The company now plans to resume the manufacture of the same colors, making also the needed intermediates from American crudes. The firm will employ 350 operatives, a part of whom, however, will be occupied in the manufacture of the coal-tar pharmaceutical specialties owned by the Bayer Co.—aspirin, phenacetin, etc.

THE USE OF NATURAL DYESTUFFS

The combined efforts of these works will unquestionable do much to mitigate the difficulties inevitable upon a cessation of a supply of German dyes. Still, at the best, they can replace for the next few mouths, or even a year, only a relatively small quantity of the lacking colors.

This fact has been quickly recognized by large consumers of dyestuffs and by the group of firms devoted to the production of dyewood extracts. The latter are making ample preparations for meeting heavy demands during the coming months. The four establishments extracting American quercitron are in a position to expand their output rapidly. The supply of cutch seems to be fairly adequate. Largely increased amounts of logwood, fustic and brazil-wood have been ordered from the West Indies and southern countries. Some difficulty is encountered in obtaining sufficient freight accommodation. Prices have risen on account of higher freights, lack of practiced woodchoppers, the temporary interruption in the export of logwood from Mexico, and the enormously increased demand for dyewoods from Great Britain to meet the dyestuff famine now threatening British textile interests.

The demand for natural dyestuffs by American mills has already set in. One large dyewood establishment has increased its sales by 25 per cent. during the last few months. Another reports that the current orders for logwood extract are 50 per cent. greater than during last autumn, orders for

quercitron, fustic and cutch have tripled, and those for hypernic (brazilwood, etc.) have doubled.

EDUCATIONAL PROPAGANDA

It is generally realized that the present generation of dyers is very largely out of touch with the use of natural dyestuffs. Unquestionably marked progress has been made during the last half century in the application of natural dyestuffs, and their economic and tinctorial value in combination with one another, and more particularly in combination with a large variety of artificial colors, has been amply demonstrated. To many, if not most, dyers this is, however, a dead letter. The facility with which coal-tar dyes can be employed, and the admirably clear and full directions provided by the finely organized agencies of the great dyestuff companies, supplemented by the services of their well-equipped laboratories, have all tended to emphasize the value of the artificial colors and to minimize the utility of the old-time dyeing materials. They have also rendered superfluous the services of trained chemists in many establishments and diminished to that extent the possibility of continued investigation by a number of skilled men along lines that might lead to a broader and more generous recognition of the genuine value of the natural dyestuffs.

One result of the present critical situation will probably be a general awakening to the importance in a well-balanced scheme of dyeing of the old-fasihoned colors, whose unquestioned worth still gives their permanent value to the choice products of oriental looms.

The American manufacturers of natural dyestuffs have appreciated the necessity of educational propaganda in this field. Skilled demonstrators are now visiting textile mills and giving practical exhibits of the modern perfected methods for using the standard natural dyestuffs with ease and confidence. As a rule these dyestuffs require more manipulation than artificial colors, but in a multitude of cases the total outlay is no greater; frequently standardized extracts now provided by the American manufacturers assure a degree of uniformity in tint quite as exact as that afforded by the coal-tar products.

AMERICAN QUERCITRON

Of special interest in this connection is the increased attention being devoted to the manifold applications of quercitron, the only natural dyestuff indigenous to the United States. The enlarged demand for the various extracts of the bark of the quercus nigra, or black oak, will be welcomed in Pennsylvania, Virginia, Georgia, and the Carolinas, where the tree is found in abundance.

Remarkable portraits and scenes worked in silk embroidery are part of the wonderful Japanese exhibit in the Palace of Manufactures at the Panama-Pacific International Exposition at San Francisco. These are so cleverly and marvelously done as to defy oil paintings for improvement.—Commerce Reports.

Wool, Tops and Yarn

The imports of wool, tops and wool yarn for the nine months ending March, 1915, are reported by the Bureau of Foreign and Domestic Commerce as follows:

Clothing and Combing Wool, Free

July, 1914 .....lbs.	13,680,588	$4,720,650
August	11,700,980	3,089,974
September	9,096,205	2,315,488
October	7,543,479	1,844,032
November	2,909,260	629,416
December	962,219	194,810
January, 1915	7,445,517	1,753,210
February, 1915	16,092,943	3,804,491
March, 1915	47,393,129	11,057,566

Carpet Wool, Free

July, 1914 .....lbs.	6,150,565	$1,028,569
August	4,777,641	769,841
September	4,705,674	773,637
October	3,942,256	641,568
November	2,541,724	457,522
December	1,955,252	328,200
January, 1915	4,191,043	604,496
February, 1915	5,414,962	786,138
March, 1915	13,393,129	2,347,774

Mohair, 15 per cent. ad. val.

July, 1914 .....lbs.	309,250	$101,930
August	238,490	93,848
September	407,651	141,040
October	470,995	169,545
November	443,466	171,401
December	308,911	115,648
January, 1915	298,906	90,553
February, 1915	481,013	133,920
March, 1915	945,083	268,781

Tops, 8 per cent. ad val.

July, 1914 .....lbs.	1,064,988	$578,152
August	396,230	191,774
September	563,447	270,546
October	433,688	192,899
November	193,878	79,848
December	75,468	27,615
January, 1915	105,833	39,174
February, 1915	72,168	35,016
March, 1915	73,285	39,556

Yarn, 18 per cent. ad. val.

July, 1914 .....lbs.	755,956	$544,974
August	307,825	223,713
September	277,355	186,235
October	374,420	247,750
November	83,234	66,712
December	142,255	97,064
January, 1915	121,463	90,628
February, 1915	117,985	84,065
March, 1915	84,766	66,992

On Oct. 7, 1847, Matthew Townsend patented an invention whereby purl work could be made on hand frames by the use of certain instruments in the place of the ordinary needles.

THE WOOL GOODS MARKET

New York, May 27, 1915.

Sales of men's wear piece goods on duplicate orders have been a disappointing business during the month. The orders have been comparatively few and in most instances for small quantities. The wholesale clothiers are ordering only what goods they find absolutely necessary to fill the orders they have for clothing, which is to be delivered at an early date.

Sales of clothing are considerably below the normal and, judging from the piece goods orders they are placing, they would appear to be far below their usual sales. They, however, are undoubtedly holding back orders for woolens and worsteds until the last day possible. This is done to bring all the pressure possible to break prices and also to determine whether their clothing sales are to hold good or to be cancelled, as has been frequently done.

The larger leading clothing firms necessarily place liberal orders early in the season. They consequently use more judgment in making their selections and take their goods according to contract. The result has been that what styles they offer in clothing became the established styles for the season and they are prepared to make deliveries of clothing based upon the opening prices for their piece goods. The smaller clothiers, who are in the large majority, having bought only sample pieces at the opening prices, are naturally disturbed regarding the firmness of prices for all kinds of woolen and worsted fabrics. This points to the probability that the larger operators are going to do a still larger percentage of the clothing business at the expense of smaller firms, accustomed to operate from sample pieces or small quantities ordered at the opening of the season.

During the month cancellations have continued to come in to a moderate extent from the clothing trade. They have been made principally on styles which have not been successful sellers.

Owing to the impossibility of obtaining certain dyestuffs several lines of heavy goods have been withdrawn from sale for the balance of the season. Other lines are being offered without a guarantee of the colors being fast. This of itself is enough to ward off prospective buyers. Faded garments are far less desirable than threadbare, warm garments, consequently it is preferable to get another year's wear out of the old suits rather than wear faded suits.

The demand for tropical fabrics has kept up for making hurry goods and bids fair to continue until a new season opens. These fabrics have proven to be a very unusual success and continue promising for the future.

Notwithstanding the several declines in prices for woolens, which was noted last month, prices have remained firm with advancing tendencies. The duplicate orders being placed show that the demand for woolens is in advance of the sales for worsteds. Both woolen suitings and overcoatings have outsold worsteds and are in a decided lead. The tendency to fancy styles is largely responsible for this result, while the lower prices for carded woolen fabrics have also had considerable influence in their favor.

Worsteds are reported as having an unusually small season. Some sellers state that they are having the dullest season for several years. A great deal of worsted machinery is reported as being idle.

Mills making carded fabrics seem to be fairly well occupied as, in addition to their regular lines, they have many large army contracts to fill. A large number of mills did not make their regular fabrics this season but confined their efforts entirely to army fabrics of various kinds.

Manufacturers are in a quandary as to values for future deliveries, on account of the firmness in prices for wool and the growing scarcity of dyestuffs. The supply of dyestuffs is gradually approaching the vanishing point, with but little prospect of relief. Two or three of the larger combinations of mills are reported to have on hand four or five months' supply, while the smaller manufacturers are reported with only enough for an exceedingly limited time. Many of the dyes now being used will not produce fast colors, in consequence of which there will be considerable trouble and disappointment caused by

fading colors, in the near future. Efforts are being made by manufacturers of all kinds of woolen fabrics to produce styles in black and white and gray mixtures and other colors that will require as little dyestuffs as possible.

Serges for the coming spring season are usually opened about this time or earlier, but as far as can be learned none are being offered and buyers do not show any desire to become interested in them.

Low grade three-quarter goods samples are being prepared, but it is not probable that any of them will be shown for orders until after June 15 or possibly later. The season for all spring goods will probably be a late one.

Extreme dullness prevails over the dress goods market, the initial business having been only moderately successful, with most mills. There, however, are a number of mills with plenty of order business on their books to tide them over the next month or two. By that time additional orders are expected to be received in quantities to bridge them over another short period of the season. Few, if any, of the conspicuous dress goods factors are inclined to boast of their season's business, they are all banking on the future to eke out the season. One encouraging feature of the dress goods business is a demand from France and England, which has recently developed, and it is hoped that it will prove to be for a sufficient quantity to relieve the situation and furnish work enough to enable mills to run to full capacity for the season. It is known that several selling agencies have salesmen abroad with their samples of woolens and worsteds, for both men's and women's wear, and that they are soliciting orders which cannot be filled there during the disturbed conditions of the various countries.

Mill men are devoting their attention to getting out new styles and fabrics for a new season. They are making a large number of plaids and checks, while stripes in various widths are being freely sampled. It is probable that stripes will remain in favor with many. It is generally understood that none of the better grade men's wear fabrics will be offered for orders until about July 15th or possibly later.

Army contracts, as usual, have attracted a great deal of attention. While there was one, or possibly two, contracts awarded during May the eagerness to secure them has been considerably dulled. The requirements of the French goverment, which is now the principal one on the market for goods, in their specifications have become so exacting and their ideas of values so low that some prospective bidders decided that the business was not attractive enough to induce their bidding for the contract. No domestic manufacturer would be justified in shipping goods abroad before they have been fully examined and accepted and paid for here by the purchasers.

A large number of mills are still fully employed on army goods for various governments, for which contracts were awarded sometime ago. Some of them have enough work to carry them over the next two or three months.

It has been reported around the market that one large contract given out by the French government has been cancellled after a combination of several mills has been at work on it long enough to get the mills filled with stock in all processes of manufacture. No reason has been made public. It is certainly an exceedingly serious matter for mills to be left in such a position.

THE SOUTHERN TEXTILE ASSOCIATION

The meeting of the Southern Textile Association will be held at Hotel Langred, Asheville, N. C., on June 25 and 26.

Friday, June 25, 11 a. m. There will be a special entertainment for the women at the Battery Park Hotel.

Friday noon. Meetings will be called to order by the president, E. E. Bowen; address of welcome by the mayor of Asheville; address, "Relationship that Should Exist Between Employer and Employe," by Captain Ellison A. Smyth.

Friday, 3.30 p. m. Trip to Biltomore estate, special arrangement of the Board of Trade.

Friday, 8 p. m. Business session.

Friday, 9 p. m. Entertainment on roof garden of Langren Hotel.

Saturday, 10 a. m. Meeting called to order by President Bowen; addresses by C. W. McSwain, Clemson College; E. M. Holliday, of the Lowe Mfg. Co., Huntsville, Ala.; H. P. Meikelham, agent of the Massachusetts Mills, Lindale, Ga.; Joe E. Brendle, Huntsville, Ala.; T. H. Rennie, president of the Pell City Cotton Mills, Pell City, Ala.

Saturday, 4 p. m. Auto ride to Overlook Mountain.

Saturday, 9 p. m. Grand concert at Grove Park Inn.

A special feature of the meeting will be the awarding of cash prizes to the members and women guests for the finest looking cotton garments worn. The prizes have been offered by various Southern cotton manufacturers. A large number of the members will come in suits made from cloth woven at their own mills.

A NORTHERN MAN IN THE SOUTH

BY AMAZON

(Continued from April.)

The negroes would start fires and gather around them to warm themselves, sometimes for half an hour at a time. Can you imagine men doing this on some outdoor job in Boston?

On my second day at work I made out my daily reports and carried them to the office of the superintendent. I was surprised at the informal way in which I was greeted. The other overseers sat around talking and joking, there was no restraint, everybody seemed natural and free. We talked to each other for ten or fifteen minutes and then returned to our work. The superintendent here in the South is the whole power so far as the conduct of the mill is concerned. He has charge of the mill, rents the houses, has them repaired, has charge of the streets, the lighting, the health and the police of the village.

Most of the mills in this State are built outside of the corporate limits of cities. The owners buy large tracts of land, lay out streets, build houses and schools, hire school teachers and have charge of the education of the young. There is no town government as in New England. The county outside of the cities is governed by the county commissioners. When a mill is built, the mill corporation owns the whole town, the superintendent having full charge of the mill and the village.

The mills work ten hours a day or sixty hours a week. The wages here are fully as good as they are in Massachusets so far as I have been able to learn. Weavers make from $10.50 to $12 a week on coarse, plain white goods on Draper looms. There is one weaver who makes $18 to $20 a week, but he runs twenty looms and is an exception. The wages paid on nappers is about the same as is paid in Massachusetts and the spinning and carding wages are good. There is a custom that seems queer to a man who has not been brought up here. When the doffers finish doffing they go out around the mill yard and play until they are wanted again, when the second-hand whistles for them to come in.

There are no colored help employed in the mills, except in the bleachery and dyehouse, and to strip cards and scrub floors. All the outside work such as yard work, excavating and road building is done by colored help. The white male help are always addressed as "Mister" and the female help as "Miss." The colored help are called by their first name, but as far as I can see are treated just as well as the white help as long as they behave well and do their work.

There is no scolding or loud talking or profanity in dealing with the help. If an operative does not do the work well he or she is discharged in a courteous manner. Every effort is made here to keep the help contented and happy. They are assisted in making their cottage pleasant and homelike. The company ploughs their gardens free, gives grass seed for the lawns, also flowers and shrubs free of charge. Prizes are given each year to the operatives who improve their yards. They employ a man who looks after street repairs and whose duty it is to see that the yards are kept clean, the weeds removed in back yards, swill removed every day, the wells cleaned out every summer and closets disinfected every other day.

The mill intends to replace all ordinary wells with artesian wells, thus ensuring a good supply of pure water. Fraternal aid societies are encouraged and have halls free of charge for their meetings. The various denominations are given land to build churches and the pastors are given houses rent free.

The mill also lends money to operatives. They can and do borrow from 25 cents and upwards with interest. Wood and coal are sold to the operatives at a lower price than they could buy elsewhere. Each mill has a company store where goods are sold for less than in town; in fact so much lower that the town people purchase from the company stores. The operatives are not compelled to trade at these stores, nor is any money taken from their pay for any goods bought at these stores. The stores are run independent of the mill. There are several independent stores in the village, one of which does a business of $100,000 per year.

There are no trustee laws in the State and there is no way to collect bad debts from persons who do not own real or personal property. The mills around here build, equip and maintain the schools, hire and pay the teachers. The schools are good and are open eight months each year, while in the rest of the county outside the large cities the school term is only four months a year. They also teach basket making, sewing and cooking, employing a special teacher for this work. Children are taught to sew, cut and make their own dresses and prizes are given for good work. They also employ a district nurse for the operatives, who visit the sick and render such aid as she can give.

There are no social service workers such as we know in New England. Any intrusion into the affairs of a Southern operative would be resented at once, but the mills aid their employes when sick and unable to work. A neighbor of mine told me that her family owed the mill $42 for fuel and rent when her husband was ill.

Rents cost $1 per month per room, that is, a three-room house costs $3. Electric light is supplied for twelve hours a day at 60 cents per month. There are four, five and six room houses, each house being detached and having a garden. There are special houses built for overseers, which are given to them free of rent. The salaries paid the overseers are fully as high as in Massachusetts for the same class of work. Overseers are given the privilege of returning to breakfast after starting up their work. The overseers meet once a month for a conference with the superintendent and talk over matters of interest in a purely informal way. Each overseer has full charge of his department and has only one boss, the superintendent. There are no workmen's compensation laws here, for employes are given medical atention free and their wages paid in full during their absence if they are hurt while at work. The mill owners are very considerate of the older operatives, who are given work picking up bobbins, cleaning waste from the bobbins and kept at other light labor where they can earn wages and be more contented than if they were idle.

During the panic of 1907 the mill ran only four days a week and all the tenements were rent free until the mill went on full time. There are no holidays here as in New England, but the mills stop several times each year for several days at a time. They stop for a week in midsummer and also during the Christmas holidays. During the summer vacation the four mills arrange with the railroads for a special excursion to the seashore at very low rates.

There are no saloons in the State and no blind tigers in the mill villages. The mills employ two deputy sheriffs who do all the police work. Families or persons who are not of good moral character are given notice to vacate their houses in three days. All trials are held before a justice of the peace, with right of appeal to higher courts. There are no State police or mill inspectors such as there are in Massachusetts, but the mills seem to observe the laws very well. The school age in this State is thirteen years and no children under that age are employed in mills around here.

The mills are built according to plans made by leading mill architects, are equipped with the latest labor saving machinery and the men in charge are all practical, having grown up in the business. One of the superintendents here carried water as a boy for the laborers who built the mill which he now superintends. Another started as weaver. The general manager of a large combination of mills here started at the bottom of the ladder, at $35 a month. All the overseers started at the bottom in their respective departments and worked up to the top.

Do the mills here have any advantages over mills in New England? In my mind they do. First, we have a good supply of English-speaking help who understand what they are told. Second, they are equipped with all the latest labor saving machinery and the mills are up-to-date. Third, the men who own the mills are in their offices in the mill every day, giving personal attention to their business.

Are the operatives here as well off as those in the textile plants in New England? After one year of close observation it is my opinion they are better off. Their wages are as high, their work is not as hard, and they are treated with more consideration. The superintendent and the help meet on the level and the old American spirit of democracy seems to prevail, so much so that I asked the superintendent of a mill here why it was so. He said, "These people are our people and we treat them as such."

Native help are always given the preference over outsiders. Last spring when times were hard in the North, labor agents offered to supply the mills here with foreign help at lower wages, but their offer was declined. The superintendent speaking of them said he would not have them if they worked for nothing.

Wages are slowly but surely rising according to the law of supply and demand and in good times help is somewhat scarce. Mills pay the highest wages, give the best treatment to their employes and make the houses and villages atractive to secure the best help. From what I have seen during the past year there is no danger of mill operatives from this part of the State going to New England to better their condition.

USE OF COTTON FOR EXPLOSIVES

From the Manchester Guardian

There has been a great deal of discussion lately on the Manchester Exchange about the use of cotton for explosives, and, though there is little precise knowledge on the subject, it is not generally believed that large quantities of good grade cotton are being used for the purpose. It has been suggested that cotton statistics this year will be untrustworthy because so many bales are going to the belligerent Governments without being counted in the commercial crop. There is no doubt that cotton waste is commonly used for gun cotton, and it happens that the ordinary waste trade has been considerably depressed. For instance, Belgium took large quantities of waste for the manufacture of cotton blankets, and this industry has completely, if temporarily disappeared. It seems most likely that all the Governments had accumulated great stocks of waste before the war, though it is reasonable to ask whether there is no chance that some of these will be presently depleted or even exhausted. So far there is no statistical evidence of any considerable amount of cotton being turned out of the usual channels. The "lintere", very short staple cotton, which adheres to the American seed, have not a separate statistical existence, but they are counted in the American crop, and it seems likely that they would be the first to be used when waste was exhausted. Then would follow, we suppose, low grade Indian or American cotton, cotton generally, and finally old shirts and any cotton garments. It is sometimes said that the alterations in machinery necessary to utilize cotton cloths would be almost prohibitive, but we have no technical information on the point. Of course Germany would hardly deserve to be considered an efficient military power if it had neglected to make large preparation of such a cheap necessity as cotton waste, but the expenditure of ammunition in this war is so enormous that scarcity of any of its com-

ponents appears to be possible. We may fairly suppose that the British Government is fully informed on the subject, and it would certainly be deeply resented if any miscalculation or misapprehension about cotton gave our enemies an advantage.

BETTER PREPARATION OF AMERICAN WOOL FOR MARKET

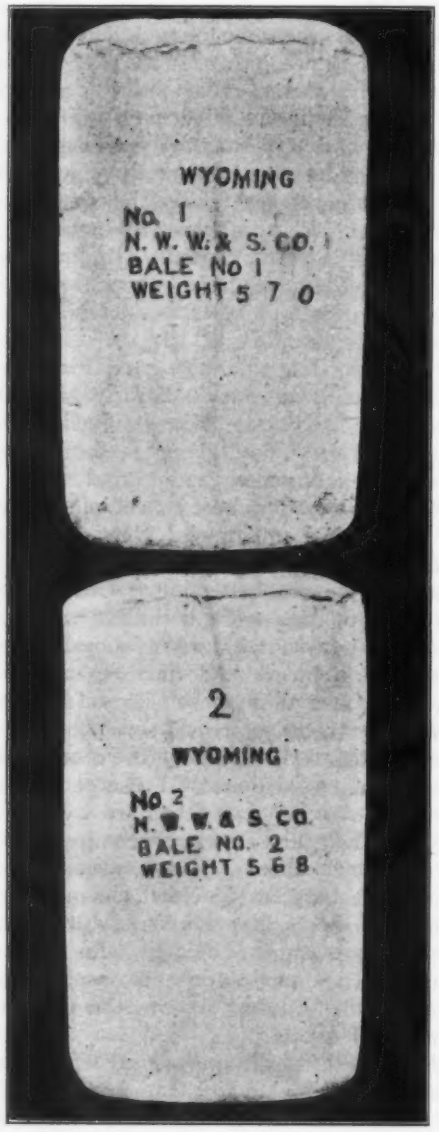
From the National Wool Grower

It can be truthfully said that more has been spoken and written about the preparation of wool for market than about any other subject, except the wool tariff, in which the wool grower was interested. A great deal of the advice as to how to prepare wool has fallen upon deaf ears. It may be said that with the exception of inducing wool growers to use paper twine and to use Kemps Branding Fluid and to keep their black wool separate from the white, really no progress has been made. In fact some portion of the West, notably in Utah, black wool still goes in with the balance of the clip.

However it may be in other parts of the country, the wool growers of Carbon County, Wyoming, are a progressive lot. They have long appreciated the short-comings of our system of marketing wool and have known that reforms were needed, so without waiting for the other fellow to establish some of these reforms, they have gone ahead and this year put their wool up in a better manner than has previously characterized any American grown wools.

Early in the year the wool growers of Carbon County, Wyoming, entered into an agreement with the National Wool Warehouse and Storage Company of Chicago, an institution that they have supported and long kept alive, to have their wool graded at the shearing plant. In order to have this grading efficiently carried out it was necessary to remodel in some particulars the shearing plants that had long been used in that section.

The Daley plant located at Rawlins, Wyoming, has been remodeled and ample preparations made for grading the fleece in a room separate and apart from the one in which it is shorn. The Cullen plant near Rawlins, Wyoming, has been very extensively remodeled, and now is one of the best equipped shearing plants in America.



NO 1. FINE COMBING NO. 2 FINE CLOTHING

The grading is done in one end of the plant opposite from that in which shearing is performed. The wool is all gathered up by

boys as it comes from the sheep and carried to the grading table where the tags and locks are taken from the fleece and the balance of the fleece then sent to the particular bin in which it belongs, each grade of wool being kept separate and baled separately.

The Cullen plant has been so remodeled that it is a two-story affair, and the sheep are shorn on the top floor. Underneath the shearing floor is a large pen sufficient to hold 3,000 sheep. The shearing floor is equipped with chutes located immediately behind each shearer. As soon as the sheep is shorn, it is pushed into this chute and slides down to the lower floor where it goes into a special pen set aside for the shearer who sheared it. In this way the shorn and unshorn sheep are not mixed in the catch pen and less injury is done in bringing the unshorn sheep onto the shearing floor.

THE CULLEN SHEARING PLANT, RAWLINS, WYOMING, WHERE THE "AMERICAN SYSTEM" OF WOOL PREPARATION HAS BEEN INSTALLED

The illustration, Fig. 1, shows the general outline of the Cullen pen, and we call particular attention to the American flag floating above it and to the fact that here and at the Daley Corral the "American System" of wool preparation has first been installed and carried out. Under this system of preparing wool for market, nothing is taken from the fleece except tags and such locks as fall from it of their own accord. The fleece then goes into the grade which is indicated by the fineness or length of fiber, that is, if it is a quarter-blood fleece, it goes into a quarter bin; if it is fine clothing, it goes with the fine clothings, etc. This leaves the fleece entire so that when it goes to the manufacturer, he will be able to sort it to the best possible advantage so as to get as much out of it as possible. Certainly this is an improvement over the system where an attempt is made to make a mill sort at the shearing plant. After the wools are graded, they are very carefully baled and stacked up. Any wool grower who sees this baled wool, or handles it, will not be disposed to go back to the old ragged looking and difficult handling wool sack.

The new bales will average over 500 pounds in weight, and when they are shipped to market will take a freight rate 15 per cent. lower than sacked wool. Also they are more easily handled, more cleanly in appearance and the owner takes more pride in what is inside of them by reason of the better appearance of the outside. Fig. 2 shows two bales marked No. 1 and No. 2. No. 1 means that this bale contains fine combing wool, which is the highest priced clean wool grown. No. 2 contains fine clothing wool, which is as fine as No. 1, but is too short to comb and, therefore, has less value.

Each grade of wool is given a number, and nothing except wool of that number is to be found in the bale so designated. Each grade

of wool has a different value, and when the buyer comes to select this baled wool, which has been graded, he knows exactly the number of pounds of quarter blood that he is getting and exactly the number of pounds of fine combings. Unless he knows this he cannot place an intelligent price upon the wool, and unless the wool grower knows how much of each grade he has to sell, he cannot intelligently put a price upon his wool. Now that these Carbon County wools have been graded, the wool grower begins to find out what his wool is worth, and he can conduct his breeding operations so as to produce some particular grade of wool.

We believe that this system of preparing wool is right, and that sooner or later wool growers in other parts of the west will be forced to adopt the progressive methods now being employed by Carbon County sheepmen. All of this graded wool is to be sold at public auction and it behooves both manufacturer and wool dealer to patronize these sales with a most liberal hand. For years both manufacturers and dealers have been criticising the methods in which American wools were prepared and marketed. In fact this lever has been used to force down prices. Our manufacturers and dealers have told us that Australian wool was worth more because it was better prepared for their use. Now that these Carbon County men have adopted the system which is ideally suited for American manufacturers, it will be little short of a crime if the manufacturer does not pay them a liberal figure for this wool.

Should this wool fail to sell or sell at a price no higher than has been obtained for similar wools, that were ungraded, then let manufacturer and wool dealer forever hold their peace about improvement in handling the American clip. This Carbon County test is going to show just how sincere the American mill has been in urging better preparation of American grown wool. The whole sheep industry of the West is under obligations to the Carbon County wool growers and to the National Wool Warehouse and Storage Company for having instituted this sensible and seemingly necessary reform in the methods of preparing and selling wool.

COTTON TEXTILES IN ARGENTINA

From a Report Made by the Buenos Aires Branch of the National City Bank of New York

North American cotton textiles are comparatively unknown in the Argentine Republic, with the exception of certain special lines which for particular reasons present advantages over the products of other countries. For example, in white duck and canvas, United States manufacturers have enjoyed a fair market, which, however, is now losing ground on account of the establishment of local mills. In 1912, a more nearly normal year than those following, the total value of the cotton printed goods imported was $3,327,000, of which the amount received from the United States was but $1,665; in the total importation of goods woven with dyed yarns, valued at $10,689,000, those of Northern origin were represented by a valuation of $9,711; bleached goods received aggregated in value $4,987,000, of which a value of but $78 was accredited to those from North America; while in a total importation of unbleached cloth invoiced at $1,167,000, those from the United States were represented by a value of $12,955. These figures alone will indicate that the North American cotton textile manufacturer has strong and well established competition to meet.

The British, German, Italian, French, Belgian and Spanish manufacturers have been in the market for years. They have had their representatives here studying the conditions and making connections with distributors of their own nationality or, if of another nationality, seeing to it that their goods were kept constantly before the attention of the consumer. The knowledge these manufacturers have gained of this market through many years of experience, which they have added to from year to year, is something that our manufacturers in the North have yet to acquire.

That the winning of the market is not a hopeless undertaking, however, may be assumed from the experience that other manufacturers have had. For years the British manufacturer was recognized as the one in the control of the Argentine market for cotton textiles, and he considered it his own.

Eventually Germany, Italy and Spain became interested. They inaugurated a painstaking campaign and have been successful in obtaining a satisfactory foothold, despite the well established claims of their British competitors. It was a long struggle. Dealers here who have watched the trend of affairs will tell you that the manufacturers sent here textile experts, familiar as well with the building up of sales and distributing systems.

They brought with them samples they thought would suit the market. If they did not fit the popular demands, or the requirements of the trade, in design, in color, in weight, in width, in quality, or in price, they spent months finding out why they did not, and how they could make them satisfactory. They were not satisfied with a week's sojourn, from one steamer to another, for they knew that the home organization sent them out to get some constructive suggestion that would enable the mill to turn out something that would be salable. A superficial observation and a quick return with the report that the market was controlled by someone else, prices could not be met, widths were different from those the mill was accustomed to making, they knew would not satisfy their principals. In short, their employers selected men that they knew could get things they went after, and the men knew that they must get them. It is true that they did not get large orders at first. They were content to obtain any small order that would serve as an opening wedge, and they kept patiently at the task of developing small business into something more profitable.

It must be recognized that the winning of this market by the North American cotton manufacturer, like the winning of other markets, may mean revolution in some of their industrial methods. The methods of manufacture for export trade are so much at variance with the requirements of the American domestic market that to meet the conditions a mill must establish an export department, the operation of which will be entirely independent of the condition of the home trade.

Specialization in the English textile industry is designed to comply with the widely varying demands of foreign markets. The cloth manufacturer turns out the plain cloth; the contract for the finishing is given to the bleacher, printer, or dyer whose prices, designs and work are most satisfactory. In the North the jobber accepts what the manufacturer offers; in the Argentine the importer accepts the design, it is true, but he specifies the color, even ordering a printer to finish goods in a color which has been offered by another printer or dyer.

Attention to individual requirements and small orders is the rule. For example, English dyers will accept an order for dyeing a minimum of three hundred yards in one shade. The acceptance of such a contract, most North American manufacturers would hesitate to consider. To be successful, however, they must return to the long discarded small scale production methods for their foreign trade.

One great stumbling block that our Northern producers have encountered is the specification of case assortments, sometimes as many as five or ten designs in ten or twenty different colors to one case. Buyers frequently require this because they want them to ship, without opening, to their distributors in the interior. In short, the European manufacturer, no matter how large or important his establishment, is prepared and willing to cater not only to the large buyer, but also to give the same care and attention to meet the requirements of the small dealer. This policy has characterized the methods of the British manufacturer, especially, and is one of the secrets of his success in building up a strong export trade in textiles, as well as in many other lines.

When the German manufacturer entered this market he was keen enough to adopt the same policy. In addition, he had the support of his Government, of German railways, steamship lines, and banks, at home and abroad, all cooperating to the same end, in a perfect system: namely to give German goods every possible advantage over others in the way of industrial costs, freight rates, banking, credit and distributing facilities. The interests of the manufacturer are interwoven with those of the Government, the banks, the railways, the steamship lines and,

last but not least, the importers who sell the goods to the consumers.

Some years ago, much to the concern of their European competitors, American manufacturers succeeded in obtaining a foothold for some of their cotton textiles in this market. They were compelled to do it by an overproduction in the United States. Importers here whom they managed to interest in their product, however, were not pleased with the result. They will tell you that as soon as the equilibrium between the supply and demand in the United States was restored, the North American manufacturer lost all interest in this market. Orders that were sent to them were ignored, or so carelessly filled that the manufacturer lost not only his connections and the market, but also disgusted the importer and destroyed his confidence.

This market is a big one. European manufacturers have appreciated its value and have so catered to and respected its requirements, that for the North American manufacturer to assume that it can be used as a dumping ground for excess products and obsolete goods, is offensive to the pride of the importer. The field is large enough to warrant the same serious attention and intensive effort on the part of the Northern textile manufacturers that has been devoted to it by those of other nations.

COLORS AND DESIGNS

Like other countries, Argentina presents seasonal variations in the requirements for colors and designs. Its population has varied tastes. It is cosmopolitan. The French influence is in the ascendant, but each nationality retains the tastes it acquired in the homeland. This is especially true of the Italian immigrants. They want the gaudy yellow and red cloths so popular in Italy. Tastes also vary with locality. For example, a very much higher class of textiles, as well as the lower qualities, is in demand in the City of Buenos Aires, than in the interior of the Republic, where the country people are the principal consumers, and medium and lower grades are required. At the present time the popular colors in Buenos Aires are grey, yellow, old rose, champagne, dark lilac, corn flower, blue and purple. The delicate rather than the flashy shades are preferred. In the interior, fancier colors are popular, and in the northern districts, and elsewhere where they are many Italians, there is a demand for yellows and reds.

Designs are also constantly undergoing changes, but it is safe to say that large figures are never popular. Stripes, including diagonal patterns, small flowers on plain grounds, and neat small geometrical designs are much in vogue at the present time. Fancy weaves, however, seem to take better than the simple patterns, one criticism of North American patterns sent here for examination being that they are too simple.

WHITE SHEETING AND SHIRTING

British manufacturers enjoy a practical monopoly in the sales of white sheeting and shirting. These goods from Great Britain in 1912 were represented by a valuation of $4,222,000 in a total import value of $4,987,000. There has been a small sale for cheap grades from Italy. There is also a growing bleaching industry in the Argentine. It is in this class that is found the heavy China clay sizing, so often referred to in reports regarding the South American market. The process is used in the cheap grades to give it the weight and make it appear as good as some of the better grades. The deception has been so successful in a certain class of the trade that it is doubtful if goods not so prepared would be saleable to those consumers. The goods are as stiff as cardboard, and to the ordinary purchaser present an appearance of quality that insures their sale. After one washing, however, it is quite a different article. In the higher grades, this process is of course unnecessary. These goods are usually marked both in yards and meters, and almost invariably come in 20 yard pieces; goods that do not conform to this rule are not saleable.

UNBLEACHED CLOTH

Unbleached cloth is known by the Argentine trade as "T cloth" and a few years ago

it was important in this market. It was used extensively in the interior of the country for shirting and sheeting and other domestic purposes on account of its cheapness, but within the last few years the demand has declined. Nevertheless importations are still large enough to be of interest to the North American manufacturer. It is believed that he would be well able to compete in this product.

PRINTED FABRICS

One of the most important staples in this market has been the so-called English percale. It has been imitated closely by the German mills during recent years. This is the article with which the North American manufacturers entered the market a number of years ago, when there was an overproduction in the United States, and proved that they had something that could compete with the British goods.

(To be continued.)

FRENCH ARMY CONTRACTS MODIFIED FOR THE BENEFIT OF AMERICANS

From the Bulletin of the American Chamber of Commerce

For several weeks the officers and the advisory council of the Chamber have been in close touch with the French Commissary Department in the hope of solving some of the troublesome questions in connection with contracts for army supplies. Owing to conditions which had given rise to some dissatisfaction both on the part of the French Government and of American manufacturers, it was deemed advisable in the interest of American foreign trade to canvass the situation with the French authorities. After several interviews had been held, the French Commissary Department, recognizing the advantage of establishing direct relations as far as possible with American producers or their authorized representatives, requested the Chamber to extend its aid in this direction.

The Government having insisted that all shipments and payments be made on a c. i. f basis, which meant that the American manufacturer must ship goods to France and have them inspected and accepted here before payment, a delegation from the Chamber made it clear that certain modifications in the form of contracts which had hitherto been passed were necessary in order to lessen the risks of American manufacturers and encourage them to enter into direct relations with the Commissary Department. Accordingly, on the recommendation of the Chamber, the authorities agreed to permit the following clauses to be inserted, if so desired, in future contracts with American houses which deal direct with the Government.

1. Samples of regular army shoes to serve as a model in manufacturing, will be supplied at Frs. 25-40. Samples showing shades of cloth desired may be had on inquiry.

2. All prices for cloth and shoes must be quoted to the Intendance (Commissiary Department) on a c.i.f. basis, at a French port.

3. A clause will be inserted in shoe contracts, permitting a slight variation in merchandise, in order that shoes which are substantially up to sample, may be accepted; absolute agreement with sample is not required.

4. A slight variation will also be accepted in the width, weight and color of cloth.

5. A clause will be inserted providing for payment not later than fifteen days after the arrival of merchandise at a French port.

6. All transportation expenses to an interior point of France after the arrival of merchandise at a French port shall be assumed by the Government.

8. When the price given in the contract is based on a fixed rate of exchange (to be mentioned in the contract), a limit for the rate of exchange shall be established in order that there may be mutual compensation in case the rate of exchange is lowered or raised.

9. The Government shall guarantee shipping space for transportation of merchandise required, and shall give instructions to that effect to the Consul-General of France.

In submitting samples showing the color for woolen cloth and cotton velvet (corduroy) the specifications herewith given are to be followed:

LIGHT BLUE OR KHAKI WOOLEN CLOTH

Width between selvages, with an allowance of 1 centimeter (.4 inch) variation more or less, 1.40 meter (55 1/8 inches).

Minimum weight to the square meter, not including edges, 550 to 600 grams (16.2 to 17.7 ounces per square yard).

Minimum number of threads to the centimeter: in the warp, 15 to 16 (38 to 40 1/2 thread per inch); in the filling, 16 to 17 (40 1/2 to 43 1/4 threads per inch).

Minimum dynamometric resistance: in the warp, 40 kilograms (88.2 lbs.); in the filling, 35 kilograms (77 lbs.).

Minimum stretch: in the warp, 5 centimeters (1.96 inches); in the filling, 6 centimeters (2.3 inches).

The dynamometric tests are made on strips 5 centimeters (1.96 inches) wide and 15 centimeters (5.9 inches) between the jaws of the machine.

COTTON VELVET (CORDUROY)

Width between selvages, with an allowance of 1 centimeter variation more or less, (0.70 meter (27 1/2 inches).

Weight to the square meter, 500 to 600 grams (14.8 to 17.7 ounces per square yard).

Minimum number of threads to the square centimeter: in the warp, 25 (63 1/2 threads per inch).

Minimum dynamometric resistance: in the warp, 70 kiograms (154 1/3 lbs.); in the filling, 60 kilograms (132 1/4 lbs.).

Shade to be the same as sample submitted.

In general the quality must be as follows: good substantial feel, without any sizing; pliant and flexible; firm texture, with the reverse side passed over twice; the cotton threads must be of good quality, the warp threads in fairly long fiber and twisted at each end, the filling threads plain with untwisted ends.

TEXTILE STANDARDS—WHEN?

By D. E. Douty, Mgr. U. S. Conditioning & Testing Co., New York

At the midwinter meeting of the National Association of Wool Manufacturers in Boston, the conditioning committee, consisting of Walter Erben, chairman, Harry Hartley, George Mabbett, John W. Nary and John Fisler, reported the results of its recent investigation of the question of conditioning and the establishment of a standard regain or moisture content. As published in the February number of the Textile World Record, the report was as follows:

> That a 15 per cent. regain is the proper basis for the buying and selling of tops, and that in the absence of public conditioning houses the establishment of a condition basis for yarns is not advisable.

This is the most progressive step toward textile standards taken by any of the American textile associations with the exception of the Silk Association of America. Many will deeply regret that the Committee could not see its way clear to recommend a standard regain for wool and worsted yarn and others will look upon the standard of 15 per cent. for tops as placing American top makers at a price disadvantage with English and European competition where 18 1/4 per cent. is the standard for moisture regain.

No matter what difference of opinion may arise as to the figure, all must admit that the work of the committee is a step in advance, and the United States Conditioning & Testing Company at New York will hereafter apply the 15 per cent regain to tops and worsted yarn unless its customers request their results computed on another percentage.

Nevertheless the report of the committee and its adoption by the exective committee of the National Association of Wool Manfacturers leaves the wool industry still traveling in a circle as far as introducing

standards into its business transactions are concerned. The establishment of public conditioning houses requires capital and a fair prospect that there will be sufficient business to meet the costs of maintenance. Those who have interviewed members of the trade on the possibilities of undertaking to deal on a conditioned basis are usually told that individuals or single firms cannot undertake to apply a limiting moisture standard until a standard is adopted and generally recognized. Thus we swing around the circle. No standard, no testing; no testing, no conditioning houses; no conditioning houses, no standard. Merrily round and round we go. What companies, which associations, which textile centers will have the courage to break the circle and start bravely off with new business methods which possess the characteristics essential to standard contracts for raw materials, yarns and fabrics?

THE SIZING OF WARP YARNS

BY C. C. MOORE, Washington, D. C.

Paper read at the April meeting of the National Association of Cotton Manufacturers

It is not the custom for American manufacturers to give excessive weight to their cloth, at least not to the extent that is practiced abroad. Furthermore as the weighting of cloth is generally done in the "finishing" process and not in the preparation of the warp yarns, the question of weighting will not be discussed in this paper, but rather the real science of preparing a warp yarn such that the highest production may be obtained in the weaving together with a high quality of cloth made.

A very natural question is, why is a warp sized? For answer it may be said to make it smooth by sealing down the fiber ends, such that it will give the least friction in its passage through the loom fixtures. It is generally supposed that a yarn is sized to make it stronger, but this is not the case. The yarn is a trifle stronger after sizing, but the tensile strength of the unsized yarn is many times greater than is the strain necessary for weaving. Yarns do not break owing to lack of tensile strength, they break because the yarn has either been frayed in the weaving process, or because they are brittle. An unsized yarn is, of course, very flexible, and the addition of any sizing will diminish this flexibility. But an unsized yarn is so liable to fraying during the weaving process, that sizing is absolutely essential even though the flexibility of the yarn will be impaired. Therefore the problem is, how to size the yarn and at the same time reduce its flexibility as little as possible.

What are the adhesives that suggest themselves for use? The strongest adhesive is animal glue, the second strongest is dextrine, the third strongest is starch paste. With either animal glue or dextrine the fibers would certainly be held down, and all fraying prevented, but the yarns would have been made so brittle that the weaving would be greatly impaired, or in the case of the glue, impossible. Actual practice has resulted in the use of starch paste as the best of the three possible adhesives. But even the use of starch paste has been shown to reduce the flexibility of the yarn, and also give a roughened surface. To overcome the reduced flexibility, due to the starch paste covering, resort is had to humidity, while to overcome the roughened surface there is used some form of lubricant. Humidity is obtained artificially in the weave room while the lubricant is added to the starch paste in the size kettle. A starched thread is, of course, hardest when it is dry, and most flexible when wet. Also when the starch on the thread is hard it is more apt to break the thread, while when wet it is more apt to be rubbed into balls on the yarn and eventually choke in the reed. Because some humidity is good it does not follow that more is better. So called "soft warps" are many times due to excessive humidity in the weave room and not to any fault of the slasher man. The more starch on a warp the more humidity that warp can stand for the reason that with a heavy coating of starch on the thread the moisture of the air is not so apt to permeate all of the starch on that thread during the time it is being woven. Again, the more starch on a thread the less flexible is that thread and the more necessary it is that this be overcome with the aid of humidity. In consequence the slasher man is constantly attempting to get on more starch to overcome the effects of the weave room humidity, while the weave room is in turn forced to get more humidity to overcome the excessive stiffening which the slasher man has obtained. And so on it goes until the slasher man has gotten all the starch on his yarn that it will carry, and the weaver has gotten all the humidity it is possible for him to get, after which they do the best possible under the existing conditions.

The lubricant used is generally some form of grease added to the starch paste in the size kettle. The amount of lubricant used depends upon the amount of harshnes that is to be overcome in the sized yarns. The more grease added to a starch paste, the more the adhesive properties of that paste are injured, for grease will lessen the sticking properties of any kind of adhesive. To overcome this, there has been invented the so-called "size-compound" which is supposed to admit of large additions of grease to the starch paste without lessening the adhesive qualities of the paste. Much secrecy is used by the makers of these compounds, and in consequence, much fraud is practiced. They are sold under varying trade names at varying prices with unlimited claims as to their efficiency. They are so numerous that the scope of this paper will not admit of a full discussion of them. However a few standard types can be mentioned.

The name "tallow compound" is often used because it is well known that tallow is the best lubricant that can be used on warp yarns. This is due to the high melting point of tallow, that is to say it hardens under working temperatures. leaving the yarns in a condition such that they do not adhere to each other. If oil be used, it remains in a fluid form on the yarn, and would cause them to hang together as do any yarns that are wet. The "tallow compound" is a mixture of tallow and oil, for the sole reason that oil costs about one-third as much as tallow, and every pound of oil the mixture contains is that much profit to the maker. His only limit is not to have so much oil that the mixture of oil and tallow has lost its resemblance to tallow. The skill of the mixing is to previously treat the oil in a way that will cause it to emulsify with the tallow such that it will not ooze out on standing, and thus show the deception. A "gum compound" is generally a dextrine which has been treated with cold water and allowed to swell into the jelly like form that dextrine takes in water. In addition to this large amount of water the compound may have, as a filler, starch which has been previously treated with borax or caustic soda to give it a similar jelly like form. The claim for such "gums" is that it will make the starch stick to the yarn. If sufficient dextrine has been used it will, but it would be much more reasonable to add the pure dextrine to the starch paste. A "size compound" may then be said to consist of a "tallow compound" which has been mixed with a "gum com-

pound," the dextrine having been found essential to overcome the loss of adhesiveness in the starch paste, that resulted from the excessive use of grease. What, then, is the remedy for overcoming this harshness in the starched yarns so there will not be required this excessive use of grease and the corresponding use of a softener or lubricant? We must look to the properties of the various starches which are commercially obtainable.

Starches may be classified into two general divisions, namely; those obtainable from cereals, as corn, wheat and rice; and those obtained from roots, as the potato and cassava. The properties of those starches in the same division are practically the same, while of starches in different divisions there is a marked difference. All of the cereal starches when boiled in water give a milky, thin or limpid paste. All of the root starches, when so boiled, give a clear viscous paste. If a paste of a starch in each of the divisions be dried to a film, the cereal starch paste dries faster and results in a wrinkled form of brittle film, while the root starch paste dries much slower, and therefore results in a smooth flexible film. This is easily understood when we look at the change a starch undergoes when forming a paste or colloid form. In this change the starch goes from a granular form into a hydrated or colloid form, which means that it takes water into its combination just as burnt lime rock takes water into its combination when undergoing the process of slaking.

A cereal starch takes up less water of combination when changing into a paste than does a root starch. The root starch combines with several times more water than the cereal starch. It is this reason why a root starch gives a paste several times more viscous than a cereal starch paste. If the same quantities of a root starch and a cereal starch be added to the same quantities of water and boiled to a paste, the root starch paste will be from five to ten times more viscous than the cereal starch paste. If a yarn be drawn through these two pastes, and then through the squeeze rolls of the slasher, the thin paste will be held in the yarn only by absorption, while the viscous paste will be held partly by absorption and by adherence to the surface of the yarn. Upon the drying of the yarns the one with the surface coating will naturally be found to have dried in that form and protect the yarn better than the other. And as it is this coated surface that is wanted for its protection against fraying of the yarn in the loom, it stands to reason that a viscous starch paste is more suitable for the sizing of warp yarns.

A thick paste must not be construed to mean a viscous paste. A paste can be made so thick that it will not flow any more than will a jelly flow. A viscous paste is one that will flow perfetly yet its tenacity is so great that the flow is very slow and stringy. Therefore it does not follow that if a starch gives a thin or limpid paste that its viscosity can be increased by the addition of starch. And conversely, if a starch has a high viscosity it is possible to obtain pastes of varying viscosities by varying the quantity of starch used. This leads to the suggestion that the scientific procedure for warp preparation would be to ascertain viscosity of the paste that is most suitable for a particular yarn for a particular purpose, and then supply the size maker with a simple form of viscosimiter such that he can measure the flow of his paste and know if he is getting what he is expected to obtain. For illustration, suppose the mill is making two sized yarns, No. 15 and No. 30, and it had been found that the weaving requirement for the No. 15 yarn is a paste of 4 viscosity, while the No. 30 yarn requires a paste of 7 viscosity. It would then be a matter of using such amounts of starch that the resultant pastes showed by a measure of its viscosity when the proper amount of starch was being used.

Scientific writers, on this subject, state that the value of a starch for textile purposes is shown by the viscosity of the starch paste that may be obtained. Therefore a method of proceedure in determining the viscosity of a starch paste has been standardized. This method is to make a 4 per cent. mixture of starch and water, that is, one part of starch by weight to 24 parts of water by weight, making 25 parts, of which the starch is 4 per cent. This mixture is brought to a boil and continued boiling for five minutes to insure a certain pasting of the starch granules. Viscosity means the rate of flow of a solution as compared with the flow of water under the same conditions. In the case of a starch paste the viscosity is measured as near the boiling temperature as possible, and the viscosimiter shows how many times slower is the flow of that paste than is the flow of water.

Having given a starch of a known viscosity, that is in a 4 per cent. solution, it would be simple to compute a desired viscosity in the size kettle, provided the boiling conditions were normal. What are normal conditions? Fortunately there are only two of importance, and these are easily controlled. First, is that of fermentation. If there be a sour smell in the kettle it indicates fermentation, probably the common lactic acid ferment, as well as numberless other wild yeasts will convert a very considerable portion of the starch which is being boiled, to a form that has no starch pasting properties, causing that much loss of starch. This ferment can easily be avoided by ordinary cleanliness, or if it exists it can be destroyed by any of the usual germicides, as chloride of lime. The other detrimental condition is the use of a hard water, or water containing much lime. Hard water will produce a very much less viscous paste than soft water. Therefore the remedy is to use soft water. Surface water is generally a soft water, while a well water from much depth is probably a hard water. If a surface water can not be obtained, condensed water should be used, and it can be obtained from the slasher cylinders in quantity sufficient for the size. With soft water, clean kettles, and clean size boxes, and a starch of high and uniform viscosity, the size maker would be in a position to make any paste required.

As previously stated, cereal starches have a very low viscosity, being not more than two times as viscous as water. Of the two commercial root starches in use, cassava starches vary in viscosity from 5 to 10, while potato starches vary from about 5 to 15. This variation is due to several

causes, such as the quality of the cassava or potatoes being used, and the methods of manufacture. If immature potatoes be used the starch granules are immature, and the result is a lower grade of starch. Or if mature potatoes be used, and in the manufacturing process the starch be bleached by use of chemicals to improve its appearance, or if proper precaution is not taken in the drying, and it is over heated, the result is a low viscosity, and a low grade of starch so far as its use to the textile manufacturer is concerned.

COTTON FABRICS FOR AEROPLANES AND DIRIGIBLES

BY WESSEX

A recent lawsuit has elicited the facts that the Zeppelin company has used in the construction of its airships a cotton fabric and has been in the habit of obtaining its supplies from Lancashire mills. In the rigid lighter-than-air flying machine woven goods have two principal uses: Forming the skin or envelope covering the ribs of the cigar-shaped upper structure; and also forming the internal gas-holders or ballonets enclosed within the outer envelope. It can easily be judged that for either purpose a maximum of strength for a minimum of weight is one of the prime desiderata. Uniformity of strength is obviously required. The strength must lie about equally warp-way and filling-way and there must be no weak places in the cloth. The fabric can be made completely windproof or gastight by suitable after-treatment, but it can be seen that for a beginning the cloth should be of a close texture, woven with perfect uniformity from yarn that is free from thick or thin places and with such a distribution of the threads as helps to make the goods as strong in one direction as another.

The conditions are very exacting in respect of any fabrics used for air craft. Lives depend upon the soundness of the material and workmanship and no expense is likely to stand in the way of utilizing the best goods that can be found. If the trade is not a very large one as yet it can be affirmed with confidence that it will become larger and more important in every sense, regardless of whether air travel is performed in machines of one type or another. At the present time the manufacture requires the use of the finest cotton yarns that can be spun and the supply of them is understood to rest in the hands of very few spinners, favorably circumstanced as to climate, help, machinery and experience, and the competition with them will probably continue to be one rather of merit than of price.

The weaving is apparently in the hands of manufacturers accustomed to weaving fine plain cloths in which a high standard of perfection is demanded; cloths for example used for embroidering and for typewriter ribbon. The business in balloon fabrics is a side-line with them, although more of their goods may be made up into balloons than they are aware of. With the weaving and finishing of the cloth the business of the textile manufacturer ends, but waterproofers have been called on to make balloon cloths rainproof, so that on being packed wet after an ascent they shall not be liable to mildew. The goods have certainly been sometimes treated with chemicals to make them more or less fireproof and they are "doped" by the airship constructors to make them gasproof.

In the nature of the case no great amount of exact information about balloon fabrics is published. This point lends some additional interest to three samples of the cloth manufactured by James Fletcher, Brook Street Mill, Chorley, Lancashire, and to a report upon their strengths and weights as given by the Manchester Chamber of Commerce Testing House. The breakage strains are the the averages of six tests on strips 5.9 inches long by 1.97 inches wide.

	Breaking Strains	
Sample No.	Warp.	Filling.
20. 4.4 sq. yds. per lb.	157.6 lbs.	147.2 lbs.
44. 6.6 sq. yds. per lb.	120.3 lbs.	113.7 lbs.
88. 7.7 sq. yds. per lb.	96.5 lbs.	102.5 lbs.

[The three samples to which reference is made by our English correspondent can be seen at our Boston office. We have analyzed them with the following results:

Sample No. 20, 4.7 sq. yds. per lb., warp, 127 ends, 49s cotton; filling, 119 picks, 52s cotton.

Sample No. 44. 6.5 sq. yds. per lb., warp, 138 ends, 69s cotton; filling, 143 picks, 89s cotton.

Sample No. 88. 7.5 sq. yds. per lb., warp, 139 ends, 87s cotton; filling, 133 picks, 89s cotton.]

Correspondence and Notes

UPON TEXTILE TOPICS AT HOME AND ABROAD

INTERNATIONAL CLASSIFICATION OF RAW SILKS BY ITS DEFECTS

BY WARREN P. SEEM
Winner of the First Prize Awarded by the Silk Association of America
(Continued from May.)

Plate No. 9—Split Ends

The split ends affect the strength of the thread; the maximum number caught is about 40. They are only caught when a

PLATE 9

loose fiber splits off and causes a break. They do not represent all in the thread, but when they run high it is a sure sign of many more in the silk and where strength is required it is well to avoid the lot.

Plate No. 10—Bad Throws

These are the result of carelessness in reeling and generally indicate inexperienced

PLATE 10

operatives. The thread usually is quite uneven when they are numerous. They run about as follows in the following grades of raw:

Grand Double Extra...	0
Double Extra	0 to 5
Extra	5 to 15
Best No. 1 to Extra ...	15 to 30

Best No. 1	30 to 60
No. 1	60 to 100
1 to 1 1/2	100 to 200

Corwscrew Threads

These are caused by an uneven tension in reeling similar to that of making loops. They run about as follows in the following grades of raw:

Grand Double Extra	0
Double Extra	5
Extra	5 to 15
Best No. 1 to Extra	15 to 30
Best No. 1	30 to 45
No. 1	45 to 60
1 to 1 1/2	60 to 80

They affect both the strength and cleanness of the silk, principally the strength.

The cleanness is to be classified as follows and to represent the sum of all the defects except the raw and winder's knots, fine and coarse threads:

0 to 125	Double Extra	Very Good
125 to 175	Extra	Good
175 to 275	Good No. 1 to Ex.	Good
275 to 350	Good No. 1	Fair
350 to 450	No. 1	Only Fair
450 to 600	No. 1 to 1 1/2	Poor
600 to 800	No. 1 1/2 to 2	Very Poor
800 to 1000	No. 2	Very Poor

Quality Number

The quality number represents a relative value in that the lower the number the less the defects, consequently the higher the true value of the silk and vice-versa, as per table following.

It includes the winding breaks, since the silk is bought in skeins and the true value may be affected 5 to 10 cents per lb. by excessive waste and labor cost in winding. It is also necessary to the most economical selection of silk of the same grade when all the other qualifications are the same.

Under evenness, the fine ends breaking out in winding are added again in order to show the true condition of the thread as received, also to calculate the change of size in throwing due to the breaking out of the fine ends.

Classification of Raw Silk by quality tests: Compiled from over 200 tests of known grading to compare with Yokohama classifications:

JAPANESE, ITALIAN AND CHINESE.

Quality Number	Grade	SUBDIVISIONS Winding	Evenness	Cleanness
Under 175	Double Extra	20	30	125
175 to 250	Extra	25	40	175
250 to 350	Best No. 1 to Extra	32	50	275
350 to 450	Best No. 1	35	70	350
450 to 600	No. 1	40	110	450
600 to 800	No. 1 to 1½	50	150	600
800 to 1060	No 1½ to 2	62	200	800
1060 to 1300	No 2	90	250	1000

CANTONS.

Quality Number	Grade	SUBDIVISIONS Winding Count	Evenness	Cleanness
Under 900	Ex. Ex. A. Super Crack	70	50	800
900 to 1050	Ex. Ex. A. Crack	80	70	900
1050 to 1600	Ex. Ex. A.	100	100	1400
1600 to 2170	Ex. Ex. B. Crack	120	150	1900
2170 to 2740	Ex. Ex. B.	140	200	2400
2740 to 3310	Ex. A.	160	250	2900
3310 to 4000	Ex. B.	200	350	3400

This method has been in use about three years and found reliable from working results in throwing.

A summary of about 400 tests shows, basing the comparison on New York Classification, that occasionally Extra Extra and Extras show one and two grades lower; quite frequently No. 1 shows one and two grades better. Second, an average of all the tests about evens up on a price basis. Third, manufacturers buying the best grades are the greatest losers. Fourth, silk received during the months of June, July, August and

September averages about two grades lower than that received during the rest of the year; the increased defects are principally reeling defects.

The subdivisions given for various grades were carefully made from standard chops of known Yokohama Classification, seasons 1911-1912.

I submit the method for consideration of the Silk Association of America, and through it to the trade organizations of the silk world for adoption.

THE TEXTILE INDUSTRIES OF GREAT BRITAIN AND GERMANY

BY J. A. HUNTER

A paper read before the Royal Society of Arts, London

(Continued from March.)

The greater part of the cotton manufactures has consisted, however, of cotton hosiery and gloves, lace, trimmings and small wares. In part by the force of cheap labor, and still more by ceaseless application for one hundred years, Chemnitz has built up a trading position in the cheaper forms of knitted cottons as solid as any that has been built up in like circumstances in our own country. Again, by the aid of cheap labor and the development of special machines, the Plauen lace-makers have evolved a German Nottingham which rests unbeaten in its own fields. In these and some other lines an effective monopoly has been erected; others hesitating to engage in business promising little profit to any but the best-placed producers, and preferring to follow and develop some line of their own.

In some of the trades of this country "foreign" competition and "German" competition have been synonymous terms, and the German has been for ever present as a spectre. Except in special and comparatively unimportant instances this is not true of the textile industry. Their labor is, upon the whole, cheaper than ours, and much cheaper in some intsances; their hours are longer than ours, but the evidence negatives the suggestion that they execute their work more cheaply, except in the departments that they have made their own and that have been neglected by us.

Figures are less to the point than the common facts of experience, and there are probably no figures purporting to display comparative industrial efficiency which ought to be taken without reserve. The fact that German competition is not the universal bugbear speaks for itself. The small quantity of German goods—specialties apart—imported into this free and open market, and the British lead of 100 millions per annum in exports, give assurance enough that the British industry in its own field occupies a highly superior position.

Schultze-Gavernitz, writing twenty years ago, showed that the Saxon and South German cotton spinners employed 5.8 hands per 1,000 spindles. The number has certainly been reduced since, but nothing suggests that it has been reduced to the 2 1/2 to 3 1/2 per 1,000 spindles which is the general rate in Lancashire, where, of course, very much higher wages are paid. The balance is well in the English favor, and extremely little is heard of German cotton yarn in the markets.

Mr. Taft's Tarifi Board made an effort to tabulate the respective costs of manufacturing wool goods in certain countries. The instances were few in which British and German quotations were obtained for the same fabrics, but in respect of the five worsted samples in which close comparison was made, it was found that the German cost of converting yarn into finished cloth exceeded the British by proportions rising from 24 to 59 per cent., and averaging 43 per cent. all round. The figures were put forward as authentic, and the direction is one in which Yorkshire could be expected to score, although perhaps not thus heavily.

On one or two occasions of severe industrial depression in Germany, samples of low woolen goods have appeared in the English market at prices lower than the ordinarily invincible Colne Valley tweed makers could accept, but no considerable consequences have followed upon these brief and infrequent appearances. Carpet manufacturers have made compiaint of German dumping. Hosiery yarn spinners have felt the oblique effects of low prices for yarn interchange-

able with their own, but in respect of sales at or below cost, the experience of the English textile industry at large is in no sense comparable with that of the steel trade.

Discussion of racial traits, except in so far as they may be revealed in industrial matters, would be outside the scope of this paper. One such may perhaps be found in relation to the machines for which we are indebted to German initiative.

German invention has contributed little to the main machinery of textile mills, but there have come from Germany various improved machines for the dyeing and finishing of goods. The machines have come, have functioned duly and sold widely, and yet have commanded few subsequent orders, for the reason that some less elaborate but more direct English mechanician has come upon the scene with a machine of many fewer parts and fittings and capable of still better work than the original. The instance does not stand alone as evidence that the German is not quicker than the Englishman in arriving straight at the essential point. That defect in them has not been remedied by the system of technical education in which the Germans preceded us.

If it be asked whether the German or the English manufacturer shows himself the more enterprising, the answer must have regard to the total size of the industries in the respective countries. Evidently, German enterprise has not led to a larger development than in England. The fact has already been emphasized that the pair have followed somewhat different lines, and this also has to be taken into consideration in drawing any comparison.

It is certain that German manufacturers have developed trades which Englishmen have declined, and have worked up business requiring English-made machines and sometimes English materials. It is probably true also that Germans have followed with more zest the development of certain new processes and certain new textile materials. Those efforts have not been uniformly remunerative, and have not led to any great and striking success in which British industry has not participated to an equal or a greater degree.

The Germans may be said to be less shy of far-fetched projects than our own industrialists, but it would be difficult to say in which textile direction their greater venturesomeness has justified itself by results. There are possibly exceptions, but the effect of a large number of inquiries goes to show that, in general, the British textile manufacturer has got the class of business that he wants, and that in his eyes the class carried on by his proximate equal in Germany is in some way less desirable. Thus one does not find that a spinner able to make a satisfactory return out of relatively coarse yarn has any urgent desire to spin higher numbers; or that the manufacturer with a prosperous trade in cloths of medium construction burns to exchange that line for a trade in goods with very many more threads per inch. Again, the possesor of a fairly steady trade in fancy goods does not necessarily envy the German his more precarious business in articles of a less staple class. The results of war may be to modify some of these valuations, but there is little to suggest that hitherto the German has come off best in the contest of wits.

There is another sense in which the British textile manufacturer has the better end of the stick. His business, as a whole, is done upon more advantageous terms than the German. Credits in general are shorter, producers get along fairly comfortably without the kartels and other mutual interferences which are always being formed and always being dissolved in Germany and Austria. The reason may be that in this country development has been more gradual and natural. The industries have extended, not to exploit artificial opportunities created by legislation, but in response to healthy demand, and this has not invariably been the case in the Protectionist countries.

The inflamed state of public feeling need not preclude mention of one matter for which the English textile industries are patently indebted to German assistance. From the earliest days of which there are

records, British weavers have owed something to foreign assistance in the promotion of their export trade. For immediate purposes one need not go back beyond one hundred years.

In the early years of the last century foreign merchants, mainly from the Germanic States, began to settle in Manchester, Bradford, Leeds and some other places, to be in immediate touch with the markets whence textiles could be advantageously bought for sale principally in their homeland. The founder of the English house of Rothschild was one of the many who came here upon this errand, and the modern export trade in English textiles grew up largely under foreign hands, and a large part of it is still transacted by heirs and successors whose names betray their origin.

Trading first to the Continent, these merchants and the English ones who profited from their example, extended their operations to all seas. Possessing the knowledge of foreign languages, usages and tastes which the English of the period lacked, they filled an obvious gap in our commercial equipment at a time when the German textile industry was in an embryonic stage. Indisputably they helped British producers to take further advantage of their capacity to manufacture cheaply and largely, and if some familiar charges brought against British traders have no force against textile exporters the credit must in fairness be awarded partly to them. Certainly it cannot be said of British textile shippers that they are reluctant to write or speak foreign languages, or to quote in foreign currency, or to sell cloth by the meter; or that they are anything less than indefatigable in their commercial travelling. In these respects everything has been learned that Germany had to teach.

Remembering that war is compact of uncertainties, and that there are no means of foreseeing the exact situation that will remain when hostilities are ended, anything in the nature of a forecast must be made with diffidence and reserve. One may, however, believe that in all probable circumstances the war will leave unimpaired our real industrial strength—our ability to produce our established products upon the most economical terms.

It may be in the power of Germany to cut herself off from our supplies in the future, but that course can hardly be more to her commercial advantage than hitherto, and it cannot be taken without incurring certain penalties affecting her own ability to compete. At least it does not lie within German power to prevent others from taking more of any commodities of which she takes less. Given the ability to produce the most suitable article at the most advantageous price, we shall find a sale for it—if not in Germany, then elsewhere. What holds good upon the one hand, holds also upon the other. So far as German success is founded upon real strength, it can be counted upon to renew itself after the interval, albeit under certain difficulties and after competitors in this and some other countries have gained experience in matching German goods.

Labor, it may be, will possibly be dearer in Germany after the war, and taxes conceivably heavier. These influences may be countered by some affecting our own side, and evidently dogmatism upon the point would be wholly out of place. Perhaps upon both sides we may look rather for the change than the extinction of trade, and we may believe that the British industry is financially better able to carry the burdens of war than the German ,and is more likely to attach to itself trade hitherto German than is the German industry to carry away business hitherto British.

There are limits to the specifically German trade that we want, and there are influences, other than the political or sentimental, tending to diminish that trade by diverting demand from the articles which cannot be got, and establishing in sale others of which the supplies are procurable. These influences must become more marked as the war wears on and the need for replenishment arises.

The duration of the war will in part govern the advantages derived from keeping open shop while the competitor is closed, and its duration, apart from an outcome

which can only be called inevitable, must also, for some years after the close, affect German capacity to carry on business. Their own particular trade is of more moment to English manufacturers than is German, and it is for quite other reasons than the prospective effect upon German commerce that our manufacturers exhibit lively interest in the question of when this war will end.

AN IMPROVED THREAD GUIDE

The illustrations show an improved thread guide recently patented in this country. The object of the improvement is to provide a peculiar form of thread-guide for spinning novelty yarn, in which one of the threads in addition to being twisted on the other is wound thereon at predetermined intervals in bunches. This particular kind of yarn is produced in the conventional type of ring-frame spinning machines by feeding one of the threads to the bobbin intermittently and the other continuously, whereby the continuously-run thread will be wound about the other or ground thread during the time the latter remains stationary. The size of the bunch is determined by the length of time the ground thread remains stationary. In some cases the ground thread is passed through the ordinary round-wire guide-eye, uniting with the continuously-run thread immediately below the eye. By this arrangement the threads are liable to become tangled, and, furthermore, the winding or bunching is not close or compact.

It is the purpose of my invention, therefore, to provide a thread-guide for machines for spinning novelty yarn in which both threads are guided separately and independently to the point where the continuously-run thread is twisted and wound upon the ground thread to eliminate all danger of tangling. A further purpose is to so construct and arrange the guide-eyes, in connection with a guide-member so that the filling thread will be wound tightly on the ground thread to produce a compact bunch.

Fig. 1 illustrates the application of the invention. Fig. 2 is an elevation of the improved thread-guide and its support, looking at one side. Fig. 3 is a similar view, looking at the other side of the guide. Fig. 4 is a perspective view in detail. The two threads which are twisted together between the guide-eye and the bobbin are fed from between the usual rolls, arranged in pairs, one for each thread; that pair feeding the ground thread, as 5, being run intermittently to stop or hold the thread at intervals, and the other pair of rolls which feed the other thread, as 6, run continuously. When the ground thread is running with its companion thread they will be twisted together, as indicated at 7. When the ground thread is held stationary the continuously-run thread will wind thereon immediately below the eye to form a bunch, 8, the twisting and winding being effected by the operation of the revolving bobbin.

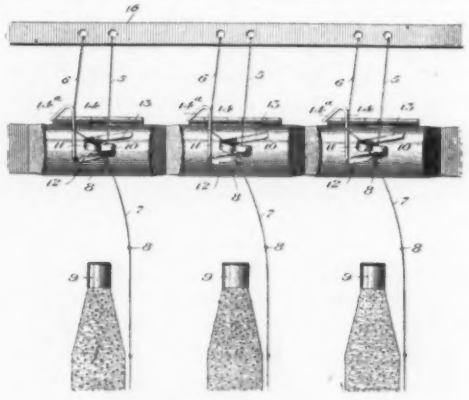


FIG. 1

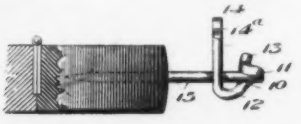


FIG. 2

FIG. 3

FIG. 4

The thread-guide is constructed to form two eyes, 10 and 11, located practically side

by side, and through these eyes pass the two threads, 5 and 6, from the guide-bar, 16, and feed-rollers. Directly below the eyes is an arm or guide-member, 12, disposed between the thread. The thread, 5, passes directly from the eye, 10, over the front side of the arm and the thread, 6, passes from the eye, 11, over the rear side, so that the twisting operation of the threads takes place between this arm and the bobbin. The winding of the thread, 6, upon the thread, 5, to form the bunch, takes place at the lower edge of the arm. In the present instance the arm or guide-member, 12, is half-round in cross-section, so as to present a tapering lower edge, whereby the winding operation will be effected close up or directly against the edge, insuring a more compact bunch.

In order to guide the thread, 5, to the eye, 10, an arm, 13, is set above the eye. For the purpose of guiding the thread, 6, to the eye, 11, there is a vertical guide, 14, at one side of the eye and terminating at its upper end in a loop, 14a. The guide, 14, 14a, is located beyond and slightly to the right of the eye, 11, so that the thread, 6, will be held a sufficient distance away from the thread 5, between the guide-bar, 16, and the eyes to prevent them from coming together, before passing through the thread-guides the loop, 14a.

BUYING A SUIT OF "IMPORTED" CLOTH

The cloth in the suit I am now wearing was woven in Utica, N. Y. A few months after I had bought it at the mills I saw precisely the same goods at a high class wholesaler's labeled "Imported". I asked a tailor who was buying stock at the place about it.

"Nobody but an expert could tell the difference," said he.

"Would you sell it to your customers as English goods?"

"Why not? It's every bit as good as they make over there."

"Then why not say so?"

"My customers want imported woolens."

"But it isn't honest."

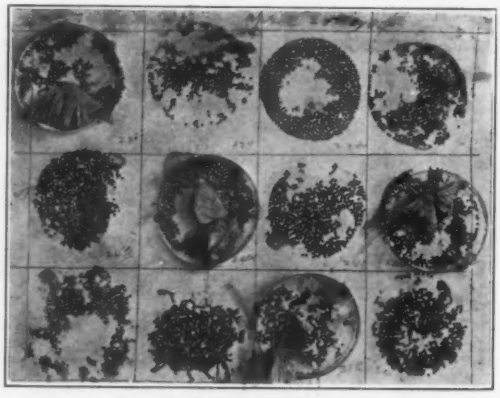
"Oh, well, nobody's hurt. They get what they want. It's business honesty."

"Business honesty", "commercial honesty", "trade honesty", these terms I have heard repeated until the mind sickened at the iteration. There is just one honesty. For any qualifying or modifying terms, substitute the prefix "dis" and you will not be far from the fact!—Samuel Hopkins Adams in the New York Tribune.

SILK CULTURE IN AMERICA

BY CHARLES A. BYERS

Although the Government has done nothing to encourage experiments in silk culture in the United States since 1908, there are a few individuals in the Southern and Southwestern States who are still carrying on the work. The Department of Agriculture first began a practical investigation of silk-worm growing in this country as a result of an agitation started during the Centennial Exposition of 1876, and with appropriations by



MILLERS LAYING THEIR EGGS

Congress experiments were made from 1884 to 1891 and again from 1902 to 1908. The experiments, which were under the supervision of the Bureau of Entomology, were conducted on an extensive scale, and while the fact was established that silk-worm cocoons of a most excellent quality could be raised "over nearly the whole country" the experiments were finally discontinued because "the higher price of labor in the United States would preclude any profit from the industry."

It is not because the Government's opinion on the matter is not accepted, however, that the independent experiments are continued, but, instead, because the few individuals who are still engaged in the work are finding silk-worm raising profitable in another way—namely, for exhibition purposes. Probably one of the most notable cases of this kind is found at Los Angeles, Cal., where a silk-worm farm has been maintained for several years by W. D. Curtis.

A study of the silk worm is very interesting. In the life of each worm there are four stages: First, the egg; second, the worm; third, the chrysalis, and, fourth, the moth. It is the moth that lays the eggs—and thus the circle is completed. The worms, however, whose silk cocoons are desired for the silk, never reach the moth or miller stage, but, instead, are steamed in the chrysalis condition and thereby killed.

TRAYS OF DRY CALIFORNIA RAISED COCOONS

Here is the process explained more explicitly: Silk worms come from tiny eggs, no larger than mustard seeds, and are hatched by being kept at a temperature of about 70° F. Soon after hatching they develop a keen appetite for mulberry leaves and grow rapidly, their length increasing from an eighth of an inch to three and a half and four inches. At the end of sixteen days, during which time they moult or shed their skins four times, they exude all waste matter from their bodies, leaving nothing but the two silk ducts or tubes, which extend the whole length of the body and contain their valuable store. The worms now begin to spin, and around the body, in from two to four days, is woven the finished cocoon.

GATHERING MULBERRY LEAVES FOR SILK WORMS

Of the cocoons thus made a number of the largest are selected for the propagation of the species, and from these the moths are delivered at the end of twelve or fourteen days. After six or seven days the other cocoons are subjected to the steaming which kills the worm in the cocoon, and at the same time cleanses the silk. Each cocoon is made up of but one long, unbroken strand, varying from 600 to 1,200 yards in length. The reeled silk is either white, yellow or

straw-colored, the white sometimes possessing a tinge of green.

At the silk farms an exhibition of every phase of the culture may be seen at any time, as the various stages of the silk worm's existence do not depend upon seasons.

ANILINE DYESTUFF SHORTAGE IN JAPAN

Consul General George H. Scidmore, Yokohama

The stock of aniline dyes on the market is running shorter and shorter, as it is practically impossible to import them, and according to the' "Mainichi" (Osaka) the present market price is ten times what it was before the war began, while holders in some cases will not part with dyes at less than twenty times the ordinary price. Prices rise daily, but if there is a reluctance to sell, there is also a disinclination to buy, as a sudden collapse of the articially inflated market is feared.

ENGLISH NOTES

By Our Regular Correspondent

An exile revisiting textile England in war time would perhaps find the most conspicuous change to be the condition of the towns after dark. Lighting is everywhere reduced to the pitch that makes the darkness more perceptible and the mills in working at night have their windows screened by dark colored paper blinds. On one occasion thus far the help has been dismissed at midnight on reports of the approach of airships and the experience will presumably be repeated. The switching-off of current, the reduction of gas pressure and the sounding of S. O. S. signals upon mill buzzers give the alarm. Although the first experience of this kind is mildly exciting, the sound of a buzzer in the night is soon taken with calmness. The hilly districts in which so many mills are placed are unfavorable to aerial manoeuvers and the public lighting is not on a scale to give marauders assistance in picking-up their bearings. The keeping of bad hours is discountenanced and 9 or 10 p. m. resembles midnight for stillness.

One or two textile machine makers in England have old associations with the manufacture of armaments. One concern has departments for making torpedo fittings and small-arm cartridges and at least one other has produced field guns. It has not seemed to the officials that the regular plant of textile machinists was especially suitable for the production of shells, which remain probably the chief need of the armies of the Allies. But the tools in use have been found quite serviceable for making rifle parts and within a measurable time the authorities will have more rifles than men to use them and largely because of the adaptation of textile machinists' facilities.

Concerns in the leather trade which work ordinarily in close connection with the textile industry have found it worth while to instal sewing machinery for making knapsacks, cartridge belts and such like, whether of fabric or leather.

The coal mines have given up great numbers of men to the army and shortage of labor in the pits accounts for some trouble experienced by textile manufacturers in respect of coal. The mills are expected to give up more men, either for army service or for the manufacture of equipments and negotiations on the subject are proceeding. There is a probability of greater obstruction to all civilian industrial work during the supreme struggle due shortly to begin, but there are reasons why the Government should not create any avoidable upset to the textile industry.

The immense purchases of munitions and materials that have been made abroad need to be paid for as far as possible by the export of British goods. Textile manufacturers make up one-half normally of the export of British manufactures, or two-fifths of the entire export trade. Anxiety not to upset export business has been recently expressed by Mr. Lloyd George. On the other hand there has been an intimation from Lord Kitchener that the requirement of munitions is absolutely unlimited. It is barely possible in practice to disturb one part of the textile industry without also affecting the other, but

it can be inferred that if there are to be interferences there must also be certain mitigations.

* * *

A step of some ultimate consequence to the textile industry was taken when the British Government forbade the use of crude tar for the spraying and making of dustproof roads. Immense quantities of coal tar are used for the purpose each summer and the crude product has been employed for cheapness. The result has been a rapid multiplication of tar-stills which turn out on the one hand a tar freed from its lighter oils and hence better for road purposes; and on the other hand produce benzol and toluol ready for the color maker or explosives maker. There is not likely to be any retrogression in this matter and whether more crude tar is produced or not, a larger output of tar distillates can be counted on. City gasworks are the distillers' sources of tar, but distillation and fractionation proceed on a growing scale at the collieries where the dust from coalwashing is made to yield smelters' coke, producer-gas, sulphate of ammonia and benzol. Various colliery owners and tar distillers are thinking of carrying their operations in tar manufacture further, so that the prospects of the larger productions of dyestuff are not limited to the development of the Government enterprise.

The Government company, British Dyes Ltd., has exercised its option and acquired the works of Read Holliday & Sons, Huddersfield, where color making and picric acid making are being continued upon a large scale.

* * *

A certain amount of bad dyeing results from the shortage of dyestuffs and the uniform refusal of dyers to take responsibility for exactness of shade. In one reported case the color on piece-dyed worsted khaki was found to come away bodily when the cloth was steeped in boiling water. The consequence was the forfeiture of all further contracts from the Government. The shortage of colors has limited the available supply to a few standard shades of which manufacturers have to make the most and it has promoted grays into favor. Sympathetic reasons make subdued colorings more popular than bright shades and a variety of causes have conspired to limit the number of new, fancy designs. The number and expense of designs for woolens and worsteds had run to absurd extremes and it will be no misfortune to run fewer styles in future. The present is hardly a good time for judging the possibilities of dispensing with patterns. Buyers have to take what they can get and be thankful. Manufacturers have been doing extremely well out of stock made in the second half of last year, but owing to the high prices of yarn and the difficulty of getting delivery from spinners they are not making excessive profits on current orders.

* * *

The law courts have brought to light the inside dealings in respect of 1,500,000 pairs of socks bought initially from an American manufacturer by a London contractor for resale to the French Government. The London profit was to be some 6 or 8 cents a dozen pairs and the selling price $1.92 per dozen. The business was introduced by a Russian who needed 36 cents a dozen for himself and the various intermediaries who had given him introductions. Thus far socks bought at $1.86 the French authorities would pay $2.28, but the American could not fulfil his contract and such goods as were delivered were bought from a London jobber at prices between $1.20 and $1.80. Apparently no more than a few were delivered and a French official whose name was brought into the case was fully exonerated. The facts were not as bad as might have been, but had all gone well it appears that one individual would have netted 27 cents a dozen without risk upon an order of magnitude. To complete the story one ought to know how much the man who should have made the socks, found the money and taken the risks, stood to make out of his bargain.

It would seem that the profits made by English manufacturers out of their Government work have varied a great deal. The first orders were taken at prices close to cost and makers whose goods gave satisfaction were filled with work at low prices. Some in

point of fact were simultaneously getting indirect Government orders at higher prices than those for direct works, despite that these goods carried a second profit. In self-defence contractors had to resist the placing of further orders until a better margin was established and the successive purchases of different governments eventually brought about terms quite satisfactory to those who were properly equipped for the business. Naturally, business in woolens at least had to be placed with mills that were not economically organized for the peculiar class of trade and hence earnings have been unequal. The orders have been mainly direct and as the buyers have to do the seeking there has been a useful safeguard against corruption. The fault oftenest found with official methods has been that the market has been raised again the manufacturer and against the consumer by the tactics employed and that money has been put, not into the purses of officials, but into those of speculators.

Wages in the cotton industry are open to revision in accordance with agreements in July and August of this year. Advances have already been sought by the card room operatives and it is certain that strong demands based upon the higher cost of living will be put in. The case is more complicated that some in which concessions have been made promptly. It is indisputable that very few cotton concerns have done well. The great majority have fared badly and have made sacrifices in the interests of their operatives at a time when distress was acute. An offer has been made to consider applications from workers on Government contracts, but it is improbable that the demands can be pacified by anything less than a bonus on general wages payable for the duration of the war. It is significant that workpeople as a whole are readiest to ask and employers readiest to grant, higher wages when the orders in hand are Government work. There is in existence a fair wages statute obliging those who accept contracts from public bodies to pay the standard rates current in their district, but the readiness to increase upon those rates is relatively a new thing.

Labor matters of one class and another continue to absorb attention in various forms. A relaxation of the Factory Acts had to be made in favor of mills executing war contracts and there are now signs of a tightening of the rules. Manufacturers are only to be allowed to exceed the regular hours when 75 per cent. of their total output is for Government requirements.

The drinking habits of the working classes have been adversely commented on in many quarters. In the textile districts it is certain that the consumption of liquor has been not more, but less than usual, and only in the most exceptional cases has there been tangible cause for complaint.

* * *

It is not to be doubted that the fashion authorities who have decreed that feminine skirts shall be worn wider will ultimately get their own way. They always win, although their progress at first is somewhat gradual. To judge from the weights now selling, fairly narrow skirts will still be worn for walking costumes in the winter of 1916. Thirteen-ounce worsteds are in demand for that season and it is obvious that the garments would be far too heavy were they made wide and with flounces. The fashion is expected to show itself more in indoors gowns and to increase the yardage account of dress goods manufacturers. It is early yet to refer to the accompanying changes that may come about in lace and trimmings and the restoration of underskirts, but all these lines are potentially concerned and developments are expected to follow naturally.

* * *

In one instance British textile exports to America during April were larger actually than in April, 1914. This is the case with cotton yarn and although the increase (523,000 pounds in place of 448,700) may not be large enough to deserve much notice, the fact still requires remark. In three instances the sendings during April were significantly larger than in April, 1913, albeit smaller than those of a year ago. Thus the quantity of cotton piece goods is 25 per cent. larger; that of worsteds and stuffs, more than twice as large; and that of carded woolen goods, some three times larger.

The table appended, which has been abstracted from British monthly returns, shows a material decrease upon last year in all the principal lines of trade during the four months ended with April. In loose terms the decreases are seven million yards in cotton piece goods, four millions in worsteds and stuffs, nine million yards in jute fabrics, nineteen million yards in linens and towards 1 1/2 millions in carded woolens. The general conclusion to be drawn from the figures vary from case to case, but in so far as the shortages are not offset by the falling off in consumption their effects should be appreciable in America.

Exports U. K. to U. S. 4 Months Ended 30 April

		1914	1915
Cotton yarn	lbs.	2,221,200	1,648,700
Cotton piece goods	yds.	23,495,300	16,419,700
Worsted yarn	lbs.	562,700	384,400
Woolen tissues	yds.	2,745,600	1,378,000
Worsteds and stuffs	yds.	12,094,600	8,026,000
Carpets	sq. yds.	164,600	191,200
Spun silk yarn	lbs.	269,102	200,710
Broadstuffs, all silk	yds.	1,427,031	1,508,097
Broadstuffs, mixed silk	yds.	523,566	256,049
Jute yarn	lbs.	886,500	60,700
Jute piece goods	yds.	24,073,800	15,141,700
Linen yarn	lbs.	993,700	583,600
Linen piece goods	yds.	46,659,300	27,679,400

A HAND BOOK OF WEAVES

By G. H. OELSNER, Director of the Weaving School at Werdau.

This Series began in July, 1911

(Translated and Revised by Samuel S. Dale.)

Other designs of this character are shown at Figs. 1822 to 1840.

Longitudinal and cross stripes on a plain weave can be obtained with a continuous 1 and 1 color pattern in warp and filling. We have already seen that longitudinal stripes are produced with such a combination of weaves and color patterns by laying the light pick when the light warp thread is down; also that cross stripes results from laying the light pick when the light warp thread is up. The stripe can be run in either direction by rearranging the plain weave to raise or lower the light and dark warp threads in the required order. The method of drafting is as follows:

1. The number of lines and threads in the pattern is determined.
2. The cross lines are painted yellow.
3. A plain weave is drafted on the yellow

FIG. 1823

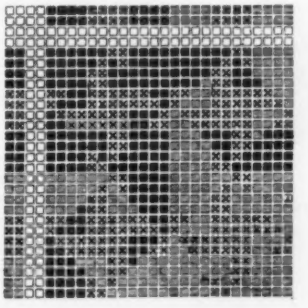


FIG 1822

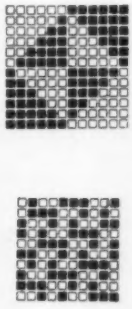


FIG. 1825

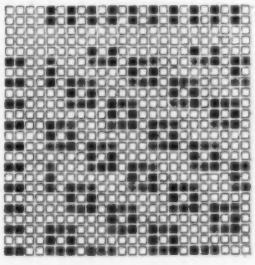


FIG 1824

FIG. 1827

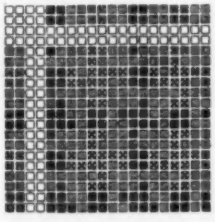


FIG. 1826

FIG. 1829

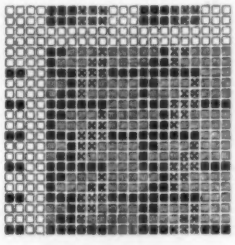


FIG. 1828

Copyright, 1915, by Samuel S. Dale

FIG. 1831

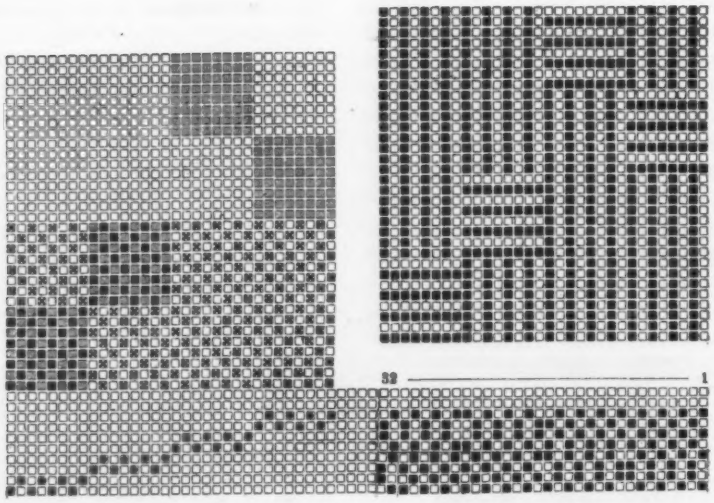
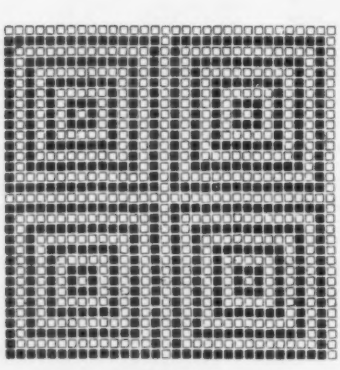
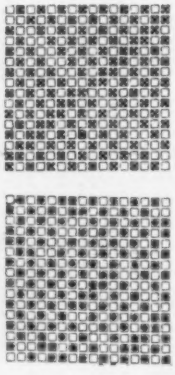


FIG. 1830

FIG. 1835





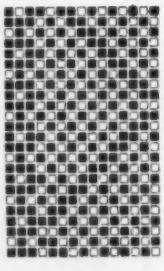


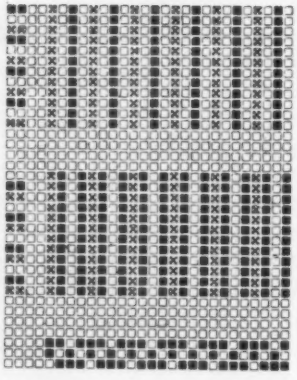
FIG. 1834 FIG. 1837 FIG. 8136

FIG. 1845

FIG. 1846

FIG. 1847

FIG. 1848



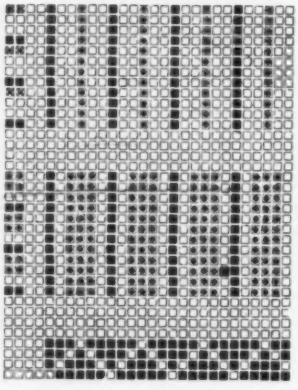


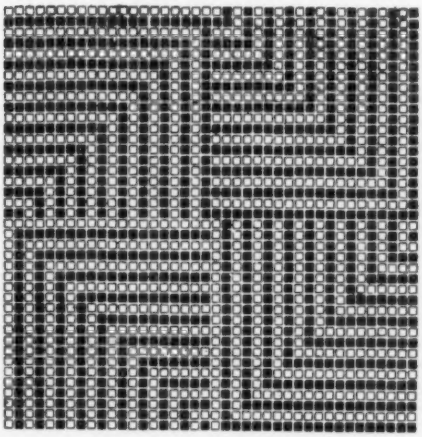
FIG. 1849

FIG. I

FIG. 1851

lines to raise the light warp when the light filling is laid.

FIG. 1832



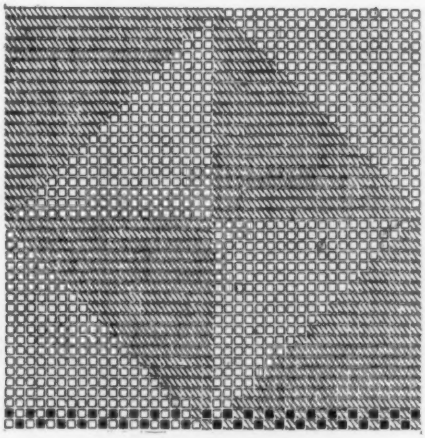


FIG. 1833

4. A plain weave is drafted on the remaining portion of the area, where longitudinal lines are wanted, to raise the dark warp when the light filling is laid.

These operations are illustrated by the two

FIG. 1842

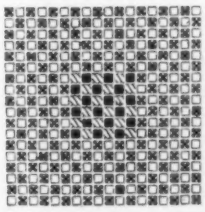
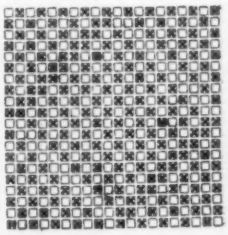


FIG. 1843



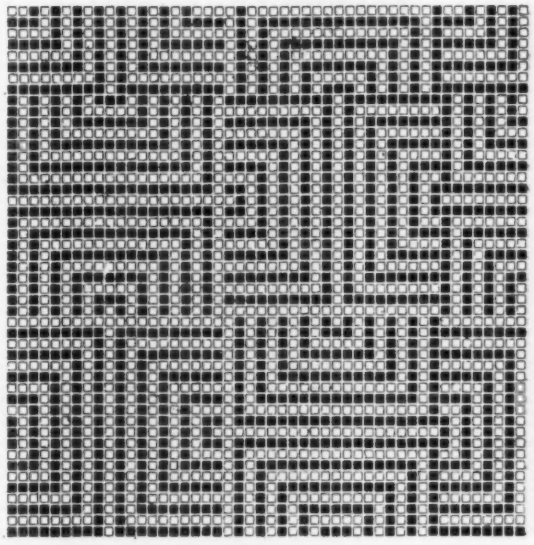


FIG. 1844

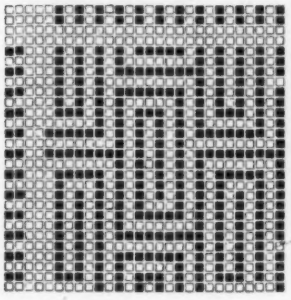
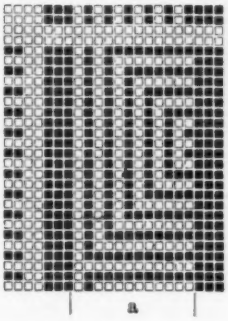
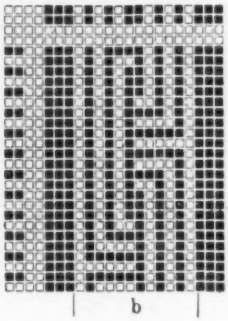


FIG. 1838



a

FIG. 1839



b

FIG. 1840

examples shown at Figs. 1830, 1831, 1832 and 1833.

At the dividing line between the two divisions of the weave two risers or two sinkers come together, but this does not injure the pattern.

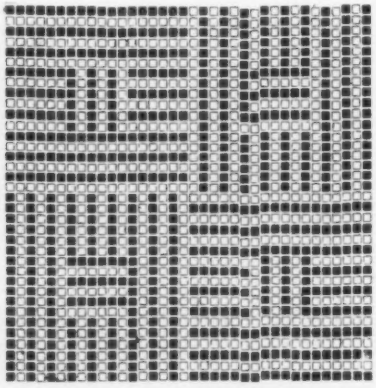


FIG. 1841

Several examples of this class of effects are shown at Figs. 1830 to 1844. Fig. 1836 is the weave for the color effects shown at Figs. 1839 and 1840.

When two threads of one color in patterns of this kind are placed together in warp and filling at the end of the weave pattern or at any other place, the light threads are changed to the position in the weave previously occupied by the dark threads, the dark threads taking the place previously occupied by the light threads. The result is that longitudinal stripes displace cross stripes, while cross stripes appear where longitudinal stripes were previously formed. This causes a complete transposition of the color effect, as may be seen by comparing the part, b, in Fig. 1840 with the part, a, in Fig. 1839. For the color effect shown at Fig. 1841 the color patterns are as follows:

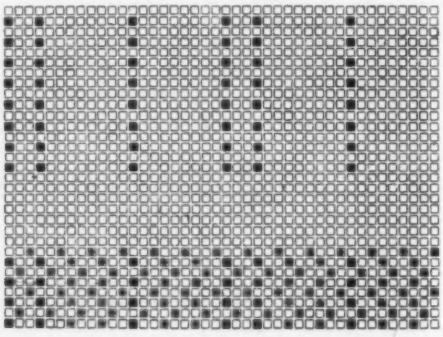


FIG. 1874

FIG. 1852

FIG. 1853

FIG. 1854

FIG. 1855

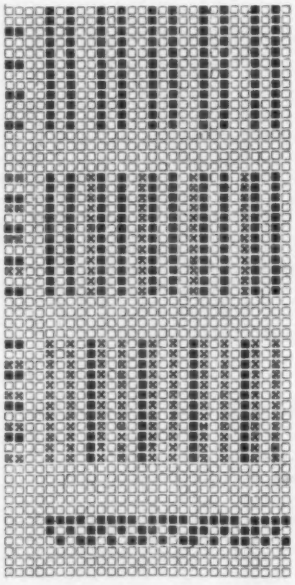


FIG. 1856

FIG. 1857

FIG. 1858

FIG. 1859

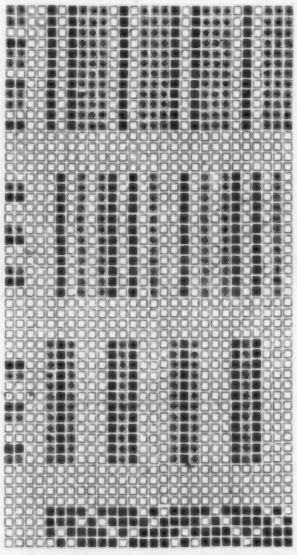


FIG. 1860

FIG. 1861

FIG. 1862

FIG. 1863

FIG. 1864

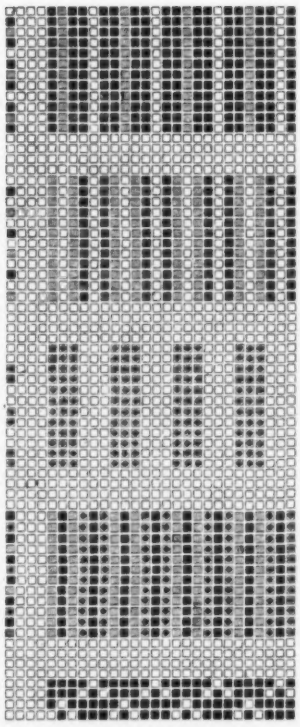


FIG. 1865

FIG. 1866

FIG. 1867

FIG. 1868

FIG. 1869

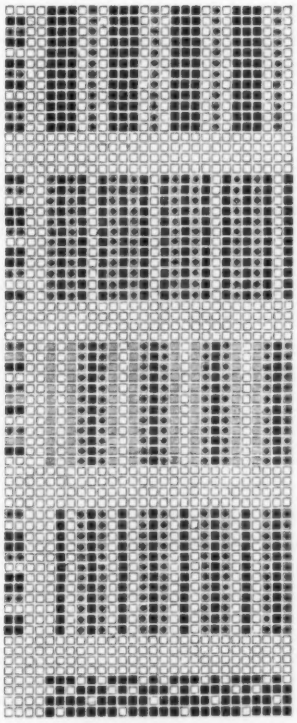
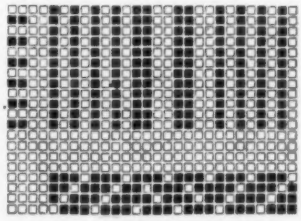
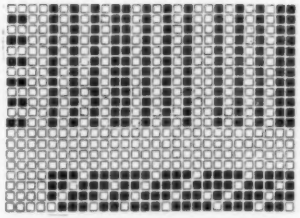
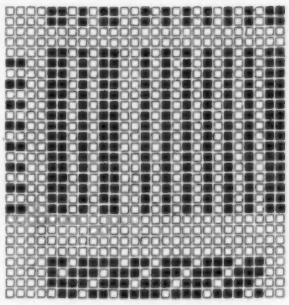


FIG. 1870

FIG. 1872







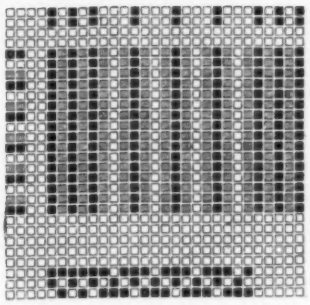


FIG. 1871

FIG 1873

Warp.		Filling.	
9 x	1 dark	10 x	1 dark
	1 light		1 light
9 x	1 light	10 x	1 light
	1 dark		1 dark
	36		40

The line effects become still more interesting when, in place of the plain weave, that shown at Fig. 1845 is used, which gives two threads, each working singly, followed by two working together.

Figs. 1846 to 1873 show a number of examples of hair lines. The weave is shown at the bottom of each figure; above the weave are the color effects obtained with various color patterns. A continuous line of one color and of the width of one thread can be obtained only when that thread is covered when down by a pick of the same color.

Fabrics in which color effects are to be produced should not be set very close in the warp, as it is desirable to have the filling colors fairly prominent.

The weave shown at Fig. 1874 is well adapted for subdued stripe effects. Each individual stripe, as well as the whole pattern, must comprise a number of threads which is divisible by 3. The warp pattern for the color shown at Fig. 1874 is as follows:

1 dark
2 light
1 dark
8 light
1 dark
8 light

21

In the year 1787 Mrs. Ramage, widow of a South Carolina planter, erected a small cotton mill on James Island, near Charleston. This was the first cotton factory erected on American soil, although a little later in the same year another cotton factory was started at Beverly, Mass.—"Cotton."

NOVELTIES IN COTTON FABRICS

BY MANCHESTER

(Continued from April.)

Warping Plan

4 ends .....white cord
32 ends .....sky, satin stripe crammed
4 ends .....navy, satin stripe crammed
32 ends .....sky, satin stripe crammed
4 ends .....white
26 ends .....sky
4 ends .....white
2 ends .....sky
34 ends .....white
2 ends .....olive
2 ends .....white
4 ends .....white cord
24 ends .....olive, satin stripe crammed
4 ends .....black, satin stripe crammed
24 ends .....olive, satin stripe crammed
4 ends .....white cord
2 ends .....white
2 ends .....olive
34 ends .....white
2 ends .....sky
4 ends .....white
26 ends .....sky

276 ends .....in one repeat of stripe

Ends per inch, 120 average. Picks per inch, 84 of 70s bleached cop cotton. Warp prepared on dressing frame. Sulphur dyed colors to stand bleach finish.

Fig. 8 shows the satin weave.

Warp yarns .....46s cotton
White cord .....(4 ends as 1) equal to 20s
Navy .....60s hard spun
Sky .....60s hard spun
Olive .....60s hard spun
Black .....60s hard spun
Sky .....for plain weave, 46s

Fig. 4 is a shirting of an elaborate character for the colored trade and shows a line in which good business is done. A neat colored crammed stripe on which is introduced a dobby figured stitch to give a spot effect makes a splendid design within easy compass of a dobby, only occupy 10 shafts. The color scheme is given to show the system of dressing the warp in the preparation section.

Warpers' Pattern

2 ends .....white cord
4 ends .....white
4 ends .....sky

FIG. 8

2 ends .....yellow, 7 times
4 ends .....white, 7 times
2 ends .....white cord, 7 times
5 ends .....white, 2/40
3 ends light green, 2.40, crammed satin stripe

FIG 9

3 ends .....yellow
3 ends .....light brown
1 end .....dark brown, twice
1 end .....white, twice
1 end .....dark brown
2 ends .....yellow
1 end .....dark brown, twice
1 end .....white, twice
1 end .....dark brown
3 ends .....light brown
3 ends .....yellow
3 ends .....white
2 ends..black, 2/40, crammed satin stripe
3 ends dark green, 2/40, crammed satin stripe
1 end medium green, 2/40s, crammed

FIG. 11

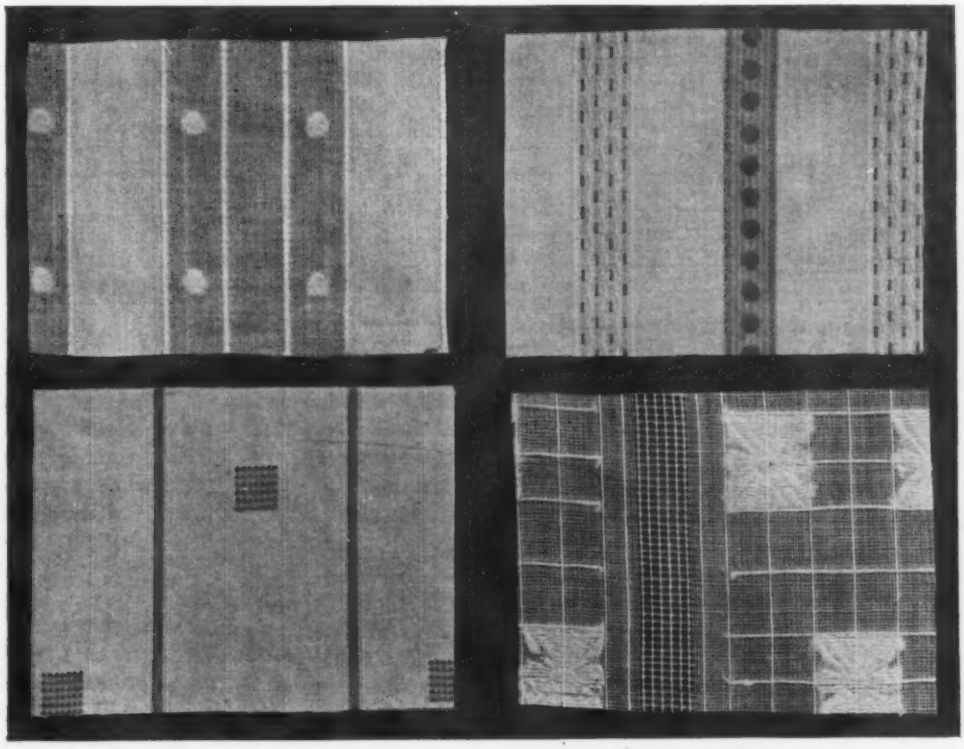


FIG. 10

1 end medium green, 2/40, crammed satin stripe
3 ends dark green, 2/40, crammed satin stripe
2 ends..black, 2/40, crammed satin stripe
3 ends .....white

FIG. 12

satin stripe
3 ends light green, 2/40s, crammed satin stripe
5 ends .....white, 2/40s

148 ends.....in one repeat of pattern

Ends per inch, 98 average. Picks per inch, 88 of 60s cotton colors, fast sulphur dyes. Dressed warp.

Warp Yarns

White .....cotton 56s
Sky 56s
Yellow 56s

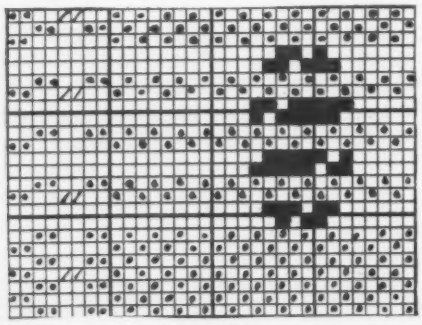


FIG. 13

Light brown 56s
Dark brown 56s
White cord 2/40s
Light green 2/40s
Medium green 2/40s
Dark green 2/40s
Black 2/40s

Fig. 11 shows the fancy stripe.

Figs. 9 to 12 show four types of cotton blouse textures that are very popular in spring and summer for European and Continental trades. They are very light in build and delicate in coloring. This class of goods is meeting with a good demand at present. Fig. 9 is a smart piece of dress material got by means of a muslin stripe, and crammed stripe in combination. Each of the stripes are clearly separated by means of a thick cord composed of mercerized yarn, which greatly adds to the appearance of the cloth. A small extra weft spot is introduced on the muslin stripe of thick filling yarn and bound in slightly around the edges of the figure so as to withstand the cutting of the spare material without allowing it to break away from the fabric.

Ends per inch, 80 for muslin stripe and 160 for ground stripe. Ends for 2 inches, 240. Picks per inch, 120. Picks per inch, 80 of 76s cotton. Bleached finish. Warp prepared on taping machine. Circular box loom (even picks, revolving box at one end).

Warp Yarns

White cord ..... 2/30s cotton
White ..... 80s cotton (muslin)
White .. 80s cotton (2 as 1 for ground, 40s)

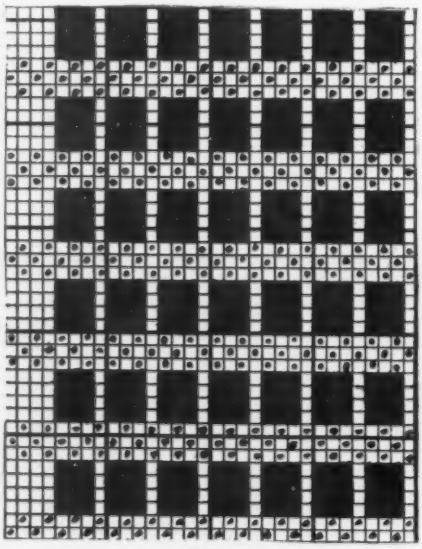


FIG. 14

Warp Pattern

		Dents
2 ends	.....white cord,	2†
32 ends	.....white,	16†
2 ends	.....white cord,	2
96 ends	.....white,	24
200 ends	.....in	80

†—3 times.

Fig. 13 shows the weaves used.

Fig. 10 is a colored spot and stripe zephyr, and shows a line of goods that are much sought after. A novel spot arrangement of the square kind has been obtained by an extra tissue thread being used, and this is bound down on the repp principle. Cords of thick cotton yarn are also made use of to emphasize the band of color and also to relieve the ground somewhat. What

was said regarding the severing of the extra filling threads in Fig. 13 applies also in this case.

Ends per inch, 96. Picks per inch, 84 of 40s cotton and tissue weft. Woven from ball bleached warp. Cop bleached weft. Ball dyed helio, sulphur color. Prepared on dressing frame (4 staves ground and 6 staves figure), 10 staves.

Warp Yarns

White cord ... 80s cotton (4 ends as 1), 20s
White ..... 50s cotton
Helio ..... 2/100s cotton

Warpers' Pattern

		Dents
4 ends	white cord,	1
2 ends	white,	1
8 ends	helio,	4
2 ends	white,	1
4 ends	white cord,	1
34 ends	white,	17
4 ends	white cord,	1
34 ends	white,	17
130 ends	in	61

Fig. 14 shows the square spot.

Fig. 11 is a well known style of cloth of which a great variety are to be found in fashion at the present time. The main feature is a colored stripe on which a ball of extra warp is developed in navy. As a bordering to the stripe there is a satin bar of sky blue, and a lighter shade breaks up the solidity of white in the stripe itself. A secondary feature is the less heavy stripe got by floated threads which are made to imitate leno work, and a fine warp central twill.

Ends per inch, 108 average (crammed). Picks per inch, 88 of 40s cotton. Bleached and dyed yarn for warp. Dressed warp. 20 shaft dobby.

Warp Yarns

White ..... cotton 50s
Medium sky 2/60s
Light sky 2/60s
Navy 2/60s
White 2/60s

Warpers' Pattern

		Dents
8 ends	medium sky,	2
2 ends	white,	1
2 ends	light sky,	1
2 ends	white,	1
1 end	navy, twice,	1
1 end	light sky, twice,	
1 end	navy, twice,	1
1 end	white, twice,	
1 end	navy, twice,	1
1 end	light sky, twice,	
1 end	navy, twice,	1
1 end	white, twice,	
1 end	navy, twice,	1
1 end	light sky, twice,	
1 end	navy,	1
2 ends	white,	
2 ends	light sky,	1
2 ends	white,	1
8 ends	medium sky,	2
52 ends	white,	26
4 ends	white, 2/60s,	1
2 ends	white,	1
2 ends	light sky, three times,	1
3 ends	navy, three times,	
2 ends	light sky, 3 times,	
6 ends	white,	3
2 ends	light sky,	1
3 ends	navy,	
2 ends	light sky,	
2 ends	white,	1
4 ends	white, 2/60s,	1
52 ends	white,	26
211 ends	in	89

Fig. 12 shows a leno stripe, tissue figured blouse cloth of a neat description, and it has also introduced a check effect by means of a thread of the extra weft at short intervals. A great variety of this style are made and a choice wearing blouse is made up by using a light tinted color for a lining, say, pink, light green, strawberry, or cream, which acts as a colored background for the white figure and stripe on the muslin stripe.

Ends per inch, 64 average (crammed and leno). Picks per inch of ground, 48 of 80s cotton, and extra weft, 23 of 30s cotton. Bleached finish (piece). Two beams.

Warp Yarns

White leno	cotton,2/60s
White	80s
White cord	2/30s

Warping and Denting Plan

		Dents
4 ends	white,	2
5 ends	white cord,	1
8 ends	white,	4
1 end	white cord,	1†
1 end	white,	
16 ends	white,	8†
1 end	white,	1†
1 end	white cord,	
18 ends	white,	9†
1 end	white cord,	1
1 end	white,	
8 ends	white,	4
5 ends	white cord,	1
4 ends	white,	2
2 ends	white,	1‡
1 end	empty dent,	1‡
*2 ends	white,	1
162 ends	in	83

*—leno stripe. †—3 times. ‡—five times.

WOOL GREASE IN ARGENTINA

Consul General Leo J. Keena, Buenos Aires

The Argentine wool exported is sent forward uncleaned. France, Belgium and Germany have in the past received great quantities of this wool solely to clean it and re-export it in an improved condition.

The normal wool exports of Argentina per year total approximately 160,000 metric tons (1 metric ton = 2,204.6 pounds). In 1912 (the latest year in which a statistical division has been made by countries), out of an export total of 164,964 metric tons, France took 51,192 tons, Germany 48,448 tons, Belgium 15,907 tons, and the United States 16,799 tons.

There seem to be only three wool-washing plants in Argetina, the names and office addresses of which may be obtained from the Bureau of Foreign and Domestic Commerce or its branch offices. These three companies have a combined capital of $1,115,000 United States currency and employ 300 persons in their establishments. The wool-washing plants clean wool for local use. Their machinery and methods of cleaning are not modern and they recover no by-products from the washing.

One of the firms states that it intends in the near future to install a modern wool-washing plant equipped with machinery that would enable them to compete with European washers and would return the wool grease as a by-product.

TRADE ABUSES IN ENGLAND

By Our Regular Correspondent

In answer to an inquiry whether English textile manufacturers have the same causes of complaint as are reported from Montgomery County, Pa., the answer must be in the first place yes. It is to be feared that there are no trades that have not their abuses and no grievances that have not their counterparts in other countries. Probably this is not the real matter. The quality of complaints is settled for us by human nature; the quantity of them is more open to regulation. Unfortunately it is not easy to say precisely how much cause there is for complaint in the one case or the other. If Montgomery County suffers more than most other counties from cancellations and other trade abuses, there are perhaps some special reasons, not necessarily identical with those that have caused English manufacturing districts to groan in times past. It is at all events not unprecedented for one group of manufacturers to suffer more than most others from the oppressions of customers or middlemen.

Whether English experience affords any hints of value remains to be seen. For the present it is only possible to offer general observations. Dealing first with the subject of cancellation, it can be said that cancellations of orders are recognized to have both their valid and their invalid forms. In the British woolen trade a distinction is observed between fancies, or goods made to special order and plains, or staples for which an alternative market can more easily be found. Customers are ordinarily allowed to cancel goods to special pattern if the cancellation is received before the order has been put into process. If the manufacture of the

goods has been begun the buyer is held to his bargain. The circumstances are not uniform throughout the woolen trade, but a large part of the business in special and exclusive patterns is done on a system which does not have much room for uncertainty. The buyer inspects the manufacturers' samples, makes his selection with care and orders an odd piece and a pattern length. He cuts up the length, takes orders on these samples and places repeat orders of a size and number proportionate to the sales that he is making.

Orders for plains are given in more bulk and are either orders for delivery at a named date or contracts for delivery during a season in shades and quantities to be specified later on. Advantage is sometimes taken of very slender delays to put an end to inconvenient contracts of this nature and soreness is caused thereby. When business is bad and markets are overloaded these cancellations are at their worst and manufacturers are least able to resist them. When business improves manufacturers take their own measures about further dealings with those who have served them unfairly. Obviously the power of retaliation varies with the manufacturers' own strength. The weak, or the ones who are worst placed for the time being, have to submit to the greatest hardships. In a strong and healthy market every manufacturer is encouraged to weed out the less desirable customers, whose character soon becomes known to all concerned. Individual effort not having altogether sufficed, organizations like the Fine Cloth Manufacturers' Association have been created and have exhibited their power to unruly parties. To judge from the poignancy of the complaints at various times heard from America, Germany and Austria, the opinion may be formed that on the whole British woolen manufacturers are less the victims of encroachments than some others. An exact standard of comparison can hardly ever be fond, but the variety and frequency of foreign complaints would seem to support this supposition.

The second of the Montgomery County afflictions has certainly no universal existence in England. Contracts giving the buyer the advantage of any decline in the market, while exposing the seller to the risk of any rise, have indeed been heard of, but they amount to no more than rare and ridiculous exceptions. When the strength of the parties is anything like equal such undertakings are bound to be rare. No false scruples prevent the wool seller or the yarn seller from exacting his full due from the manufacturer. In common English experience the buyer of cloth has not the leverage to enforce such a concession. The season sometimes ends leaving unfulfilled contracts open and it is fully to be believed that the customer for cloth escapes from them much more easily than can a customer for yarn. It is never said that contract-breaking in England attains the same dimensions as in America. And it is well known to manufacturers doing business in both markets that American customers treat their responsibilities with more license than English ones. On the one hand they place larger orders and on the other they issue more reckless cancellations. The two things go together and it is equally evident to Americans and to Englishmen that business operations are conceived of in quite a different spirit in the two countries.

English manufacturers have their own grievances, of course, notably against the shippers who obtain patterns from them, obtain orders and give these out to other people; and against customers who are excessively strict about the smallest trace of offshade. What gives perhaps the most dissatisfaction of all are the small things—claims for short measure which cannot be veried, claims for damages which exist mainly in the imagination, and frivolous impositions in general. Some of these arise out of the natural repacity and meanness of the customer firm, some out of the unscrupulous sharpness of an ambitious sub-manager or assistant buyer and some others out of the misdirected energies of commission spongers and packers who like to show their principals a profit upon their services. The warfare against these petty tricks is incessant and there is no doubt that the spirited opposition displayed by the sufferers does something to hold them in check, without however bringing about their long-desired abolition.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

DYEING HAIR CLOTH

Editor Textile World Record:

Kindly inform us how to dye hair cloth, so that the hair and the warp will be black. It is woven with a gray warp and the hair is brown. We are enclosing two samples, one in the black.

Orleans (2401).

Horsehair and cotton may be dyed black with any of the direct blacks which dye wool and cotton in one bath, but under existing circumstances these may not be easily obtainable. So far as can be ascertained the ordinary practice in England is to dye the hair in the loose state with logwood and copperas and to leave the warp undyed. Adapting that practice to the case in point, it would be needful to treat the fabric with sumac in order to prepare the cotton and then to dye with copperas and logwood when both warp and filling would take the color.

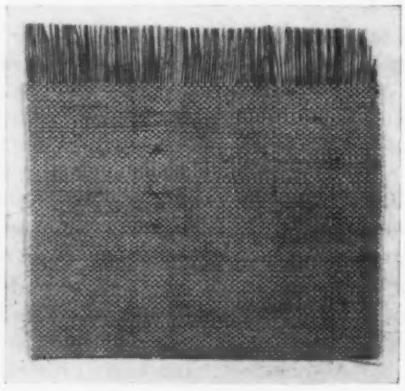
A cheap way of doing the work would be to dye the fabric at a heat just below the boil with sulphur black. A fair result is obtained in one bath, or a cleaner result by chroming the cloth later.

Strand.

Hair cloth is usually dyed on a jig, or on a machine that is constructed so as to combine the chief features of both the jig and a continuous machine in which cloth has an up-and-down course over and under several immersed rollers.

To dye hair cloth satisfactorily, either black or in colors, requires that all grease shall be removed. If the hair has a tendency to show unevenness, the greater should be the pains taken to make it clean by giving a preliminary passage through a warm, weak solution of pearl-ash (not soda-ash) heated to not more than 110° F., and containing not over 3 1/2 pounds of pearl-ash for each 100 pounds of cloth. After two passages, the cloth may be given a light rinse, when it will be ready for dyeing. This light potash wash adds materially to the finished value of the cloth, as it effectively prepares it for dyeing. This preparatory treatment may be conveniently carried out in the same machine in which the dyeing is to be done, as it will thus save some time.

For a good black, covering both the cotton warp and the horse-hair filling, the so-called oxy-diamine blacks are most generally employed. According to the color of the hair used and the grayness of the cotton, from 3 1/2 to 5 pounds of dye will be required for each 100 pounds of cloth, and the number of passages will be regulated by the volume of liquor. As a rule, a good black



SAMPLE OF HAIRCLOTH FABRIC

showing no bronziness, ought to be obtained in a few passages, not exceeding four.

The dyes should be first dissolved in hot water and added to the bath in two equal portions, one at the commencement of dyeing, and the other, after the first run. This evens the shade at both ends of the cloth. Add to the dyebath about four or five times as much crystal Glauber's salt as of dye stuff, and gradually raise the temperature to the boil by the end of the second run. Keep boiling for the next two runs.

Owing to the small cost of the dye in proportion to the value of the cloth, few dyers save the "kettle" for successive dyeings, preferring to pull the plug and commence fresh for each batch. While this may seem wasteful to some extent, it is, indeed, most economical, as each batch will be more uniform with the sample than if it is attempted to build up a shade on the standing kettle principle.

As direct blacks may be somewhat scarce during the present war, horse hair cloth dyers may have to resort to the old method of using logwood, which was employed exclusively for this purpose long after the direct blacks were introduced. A good black, suitable for this work is made by dyeing in a bath containing for each 100 pounds of hair cloth: 10 pounds of solid logwood extract, 2 1/2 pounds solid fustic extract, 20 pounds ground sumac, and 3 pounds of crude argols. Boil up together, cool, enter the cloth and work for 1/2 hour, raise the temperature again to the boil, and boil for 1 hour. Lift or shell up the cloth, and add 6 pounds of clean copperas, and 4 pounds of bluestone. Enter and boil again for 1 hour, again lift, allow to cool off, and shade in the same liquor, using 3 pints ammonia and 2 pounds of soda ash; re-enter, run to shade and rinse well. A sample of hair cloth dyed by this process in 1890 is in excellent condition to-day. Beta Naphthol.

UNEVEN KNIT GOODS

Editor Textile World Record:

I am sending you with this inquiry a sample of our knit goods bleached in the roll. By holding it up to the light you will notice that while the wale runs perfectly straight lengthways of the rolls, the rows of stitches are twisted out of shape so as to occupy a diagonal position. The goods are knit on a 16, 17, 18, 19 and 20 inch machine, 14 cut, and the goods are defective from all of them. These goods are apparently all right so far as this defect is concerned when they come from the knitting machine, but the imperfection shows up in the cutting room after the goods are bleached. We use horizontal pipes for drying the goods. While it looks as if the trouble was caused in the bleaching process, still we would like to have the subject investigated thoroughly and get the opinions of knitters as to the cause and remedy.

Haraba (2438).

It is evident from an examination of the sample of knit goods submitted, that the trouble arises in drying after bleaching, and is due primarily to uneven tension exerted on the goods at the moment actual drying takes place. Such a condition may be due to one of several causes: Allowing the goods to feed to the spreader while in a slightly twisted condition, or failing to get an even tension on the first layer placed on the roller; or by "brake ropes" often used to prevent a too free delivery from the drying pipe. While it is impossible to state the exact cause of the trouble, it is very important to avoid stretching the goods unnecessarily. Where any tension whatever is exerted on the goods it should be maintained uniformly. Weybosset.

I do not see how the uneven knit goods can be caused in the bleaching process, unless the goods are unrolled and handled very roughly. I am firmly convinced the defect is caused by pulling the goods over the horizontal piping for the purpose of drying. "Haraba" will notice in drawing the goods off the roll over the piping that the two sides have a tendency to pull tight, leaving the center of the material in a baggy condition. This would naturally cause uneven goods. He should examine the first pipe or probably a few of the front pipes which the goods strike first when they are in a wet condition to see if there is a roughness that would tend to increase this drag and draw the goods out of shape. This is liable to happen if there is considerable tension as the cloth is stripped from the roll. The tension will be increased if there is any resin used in the bleaching solution or if the bleaching soap contains resin, which makes goods rough while they are in the wet state. When they are pulled over the horizontal pipes this roughness causes the goods to pull. To overcome this drag rub the pipes with an oily cloth, with not too much oil on it, as the goods are pulled over the pipes. This will ease the drag. If this does not remedy the difficulty put a brass sleeve over the pipes to work loose so that it will turn around with the pulling of the material. Keep a watch on the goods to see if this drag is the cause of the trouble. If this does not overcome the difficulty I would advise installing a different dryer. I would also ad-

vise using a wire when commencing to pull the goods over the pipes, threading the wire through both sides of the goods. This will help to prevent one lap dragging before the other. Use a brass or strong copper wire for this purpose, but brass is preferred.

Dulcimer.

The slant in the sample submitted is no doubt caused in the process of bleaching. "Haraba" does not state the kind of machinery used in bleaching so that it is difficult to state where the trouble arises. I have come to the conclusion, however, that there is too much tension and drag on the guides. Rolling the cloth thicker on one side than on the other twould cause it to twist out of shape. Mohegan.

FINISHING NOTTINGHAM LACE CURTAINS

Editor Textile World Record:

We are enclosing a piece of Nottingham curtain which is made with a coarse two ply peeler yarn. You will note the fluff on the goods and would ask if you know of any formula which we could use in dressing that would eliminate this fluff. The goods are bleached with the tom-tom system and are dressed with hot roller tenter.

English (2426).

The best way to remove the fluff from lace curtains is to pass the goods over a gas singer or dressing machine. These machines do not cost very much and are run at a good speed so that a large quantity of goods can be turned off on one machine, approximately 120,000 to 130,000 yards in a ten-hour day. A machine with double gas jets to singe on one side only would do. The curtains being of an open texture every fiber that is loose is burned off, both on the face and in the threads of the pattern. I presume this is what "English" is looking for as it would improve the appearance of the curtains and make them look a finer quality.

The goods are passed over these gas jets dry, before they are put into the bleaching process. If "English" adopts this method of getting rid of the trouble, it will be to his advantage to get someone with experience to handle the machine.

From the question I presume "English" wants to use something in the dressing preparation to eliminate the trouble, but I fail to see how he will overcome this on the inside of the threads. If the goods were a plain woven fabric it would be a different proposition. Some three years ago I had trouble with a cheap line of plain cloth. After being finished they showed too rough on the face and we had numerous complaints. It would not have paid me to singe the goods so I had to overcome the difficulty in the dressing and finishing. This I did very easily with a plain cloth, but I would not vouch for its success on an open-curtain fabric.

I was using a large tub for the mixing and made 120 gallons each time, so I added 25 pounds of glue to this quantity of a mixing and passed the goods through, giving them a little extra time on the calender, and they came out all right. The nap was laid and they had a good finish on the face. The same would occur on the curtains, but as I have said before, the fluff is on the inside of the threads. However, it would do no harm to try using about 1/4 pound of glue to 5 gallons of a starch solution. If this makes the goods too stiff either reduce the starch or reduce the glue. From the action it has on cotton I feel sure that it will help to lay the nap and he can use it at different strengths to see which gives the best results. If this does not do the work I would advise using the singeing machine and do the starching and finishing the same as before.

Dulcimer.

HOLES IN KNIT GOODS

Editor Textile World Record:

What is the heaviest yarn that can be knit on a 10-cut rib machine to good advantage, with 36-gauge needles and 24-gauge hook for cylinder and regular 36-gauge dial needles? I am trying to run 10 1/2 yarn and the goods appear full of holes. Can you suggest a remedy? I would also like to have you advise me as to the best way to set a knitting machine to get a good elastic fabric.

Saxon (2443).

The heaviest yarn that can be run on a 10 cut frame successfully, depends on how tight the goods are to be knit. The sample enclosed with the gauge of needles used and number of yarn, should run well, provided goods yarn is used. Still a No. 12 yarn might do as well and run without trouble. The hole in the sample is caused by a knot, which shows that the knots are either too

large or the hooks too small, or perhaps the yarn is poor. Try a flat knot. If "Saxon" does not wind his own yarn, catch the big knots in the stop motion strippers. Try the knots to see if they will slide through the hooks freely. If not, change the hooks. The sample shows either a long stitch or that the cam is holding down too many needles; the dial needles seem to pull back too far, as the distance between wales shows. The wales ought to be close together for that cut and yarn.

In order to get a good elastic fabric run the dial as low as possible and make the stitch and all changes with cylinder needles. Let the dial cap run as far back as possible so that the cylinder stitch will be formed and released before the dial stitch casts off. On the style of frame mentioned the dial should cast off about five needles after the cylinder needles release. Trenton.

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CLOTH CUTTING DIES

Editor Textile World Record:

Do you still supply the dies for cutting out a sample of cloth 4.32 square inches, such as can be used with the straight line system of cost analysis? Dumar (2433).

We usually carry a few of these dies in stock for the accommodation of those who use this system of analysis which we have found by long experience to be the best and shortest method. Price is $5.00.

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SPLITS IN SILK RIBBON

Editor Textile World Record:

We are sending you herewith a sample of a piece dyed silk ribbon and would ask you for information as to the so-called splits in same. We have had various opinions as to the cause of these splits. Faxon (2448).

It is my opinion that the trouble is in the construction of the ribbon; it is entirely too light. I would suggest using a heavier grade of raw silk or a light grade and double ends. If it is not convenient to do this, the finisher should use more glue. Erimo.

. .

It seems to me that the splits in the samples of ribbon you enclose are due primarily to the weave that is used. It will be noticed that the warp slips very easily on the filling when the ribbon is held between the thumb and forefinger of each hand and pulled apart. I would suggest that "Faxon" make some of the ribbon with a tighter weave and note whether the slipping difficulty is overcome. "Faxon" will find a very extensive collection of weaves in "A Hand Book of Weaves" which has been running in our magazine for nearly four years. Federal.

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STANDARD LENGTHS FOR HOSIERY

Editor Textile World Record:

Please give the standard lengths for misses' hose and men's half hose. Knitter (2460).

The length of misses' hose should be three times the size of the foot. In some instances the standard manufacturers vary this one inch. In other words, a 9-inch hose for misses should measure 26 to 27 inches. Many manufacturers do not have machines to make every individual size of children's or misses' hose. They have machines that make even sizes and they board out the uneven sizes. The consequence is that the length of 5 and 5 1/2, for example, might be the same.

The standard measurements for half hose are as follows:

8 and 8 1/2 in. foot has a 6 1/2 inch body.
9 inch foot has a 7 inch body.
9 1/2 and 10 inch foot has a 7 1/2 inch body.
10 1/2 and 11 inch foot has a 8 1/2 inch body.
11 1/2 inch foot has a 9 inch body.

The rib top on all sizes should be the same, 5 1/2 inches. Ardmore.

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KNITTING TERMS

Editor Textile World Record:

What is the meaning of the term "knitting point"? If the cap of a circular knitting machine was not set in the right position, would this interfere with good plating? Casma (2447).

The term "knitting point" refers to that point where the completed stitch falls off the needles, or in other words, the cast off. The dial and cylinder do not cast off together; the cylinder stitch is formed and released before the dial stitch is cast off.

The dial cap of a circular frame must be in an almost exact position for perfect plaiting. There are several styles of frames that use a longer dial stitch cam, thereby holding the dial stitches with latches open until

the cylinder stitch has released. Let the dial run as far back as possible without dropping stitches. There are many helps, such as tention on yarn, location of hole in yarn guide for back thread, position of yarn guide, smooth needles and many others. Try a colored yarn if using all white to show up the poor plating. Trenton.

SAMPLE OF BARK

Editor Textile World Record:

We have been making a raised camel hair cloth of a bark purchased from the Underwriters as coming from an Oriental company. We have been assured that this bark came from either Japan or China, but we are at a loss to find out what it is. Could you inquire of your correspondents as to the nature and name of this bark and whatever other information they can give?

Pekin (2430).

The sample submitted is a tannin bark, and has all the indications of Mimosa or wattle bark, a product of Tasmania, but found in other countries of about the same latitude. For a number of years it has gradually gained in importance as a source of tannin, and is now recognized as a competitor of a number of other sources of tannin.

There are several varieties of wattles, the Australian being given the preference, and from which an extract has been made that is concentrated so as to contain a considerable percentage of tannin. It comes into commerce chopped or ground, and is chiefly used in the tanning of leather, by the use of which it produces a rather red variety.

The following is a list of several varieties, with the amount of tanning material they contain: Golden wattle, Acacia pycnantha, 49.5 per cent.; green wattle, A. decurrens 40.2 per cent.; black wattle, A. binervata, 30.2 per cent.; and silver wattle, A. dealbata, 12.2 per cent. Berwick.

The bark in question has no strong coloring principle to make it useful as a dye. As it is not perceptibly astringent, it is not likely to be a tanning material. Not being aromatic it is probably not a pharmacist's drug and in any one case is not any of the barks commonly used in pharmacy. Its most remarkable feature is revealed on breaking a portion gently with the fingers when the two pieces remain connected by numerous fine strings of a light colored and highly elastic nature. These filaments appear to be insoluble in water and may be dried vegetable gum or sap; at any rate their character is not that of bast fiber. Adhering to the outside of our fragment is a clot of this gum of a distinctly rubbery nature. Taking all things together it may be conjectured that the sample is the bark of a rubber plant. Whether it is profitable to crush such material in bulk and extract the rubber with solvents, cannot be stated. The regular course—needless to say—is to tap the tree, run off and solidify the latex.

Regent.

THE ORIGIN OF BLANKETS

Editor Textile World Record:

I would welcome any information as to the statements that blankets were invented in 1340 by Thomas Blanket of Bristol; a statement which persistently reappears in the newspapers.

Laine (2411).

Like many other oft-repeated stories this one contains elements of inherent improbability, together with a germ of truth. It appears from Rymer's Foedera that a Thomas Blanket did live in Bristol in 1339, when he and certain others were given official permission to set up looms in their houses. But there are certain facts to bear in mind. Surnames in the 14th century were not as indispensable as today. Men were called after their father, their residences or their trade, and upon this ground it is at least possible that Thomas was called Blanket because he made blankets. Following the usual rule of textile manufacture in that period the goods made by Blanket and his friends should have become known not as "blankets", but as "Bristols".

The statement goes that Blanket was the inventor of the article. But in a document ascribed by scholars to A. D. 1300 occurs the phrase "his curled whit blanket". There may be a shade of doubt about the year in point, but it will not be professed that Blanket and his fellows, with their facilities, could have manufactured a great many pieces by 1346. Yet in that year "uno blanket" was named in a will in York, a city 200 miles away. If blankets were an entire novelty in 1340 it is at least a suspicious circumstance that in

Piers Plowman (1392) the author should lament that he had no "blanket in his bed". These items discountenance the story that Thomas invented blankets, without doing violence to the probability that he manufactured them.

Blankets are not frequently referred to in the statutes relating to textile manufacture. In these, however, there are repeated references to "plunkets" and the transition from this to "blunket" and from there to "blanket" is easy to imagine. The possibility is a beautiful one, but it will not do, for in an Act of 1606 both plunket and blanket are mentioned in circumstances which forbid confusion one with the other. Plunkets were ranked among fine goods and were generally dyed azure or blue. Manufacturers were not allowed to put flocks, thrums or lambs wool into plunkets. Indeed the art forbade the use of these inferior materials in any cloth but "one onlie kynde or makinge", which cloth "for better and more easie distincion" was to have one list made wholly of black yarn. To this rule there was one important exception. It was agreed that "Flannell, Wadnall, Coverlets or Blankets might be made of such material as had been lawfully used and accustomed hitherto."

How then did blankets come by their name? They doubtless acquired it abroad upon the continent of Europe. Thomas Blanket's appearance in Bristol follows hard upon Edward III's invitation to foreigners to settle and pursue their crafts in England. The point favors the presumption that he was a Fleming. Three years earlier Flemings had settled in York and it is pertinent to note that they set up a manufacture of "coverletts and coverings for Beddes". Fabrics called beds were manufactured also by the fugitives who settled in Norwich at a similar time. The probability is greater that these strangers brought over the art of blanket making than that Thomas was the inventor. Unlike Duffel or Dormick, the name blanket cannot be traced to a place, but it can be attributed with some confidence to a language. Blanket is so reminiscent of the blanc (= white), that it is under strong suspicion of French or Walloon origin.

Venator.

A NON-CROCKING HEMATINE BLACK

Editor Textile World Record:

We would like a formula for dyeing worsted yarn with Hematine black so it will not crock.

Dyer (2471).

The expert to whom we referred this inquiry replies as follows:

I would suggest the following formula for the dyeing of worsted black with Hematine black:

Prepare mordant bath with

3% Bichromate of Potash.
3% Half Refined Tartar.
¾% Bluestone.

Work in this for one hour at a boil, wash twice and enter logwood bath prepared with a good grade of Hematine from 20% to 30%, according to depth of shade desired, or shade off with small amounts of Fustic or Alizarine Red WB. Boil in this for one hour, wash once or twice.

While a Hematine black produced on this mordant should not crock, it is recommended, in order to be on the safe side, to treat the goods in a fresh bath, cold, to which 1 per cent. acetic acid, or 1/2 per cent. sulphuric acid has been added. Work for five or ten minutes.

Another way of after-treatment would be to treat with 1/16 of 1 per cent. titanium potassium oxalate, cold.

Moreau.

SOLIDONIA

Editor Textile World Record:

I am using solidonia in wool mixes but on account of the length of the fiber am having trouble on the finishing card. These long fibers lap over and catch on the next end, break and run as a double end. Please inform me how to overcome this difficulty.

Phoenix (2457).

Edward Elsner, 184 Summer St., Boston, the sole American agent of solidonia, to whom we referred this question, replies as follows:

"In my opinion the difficulty would be either partially or wholly remedied by using oil on the stock previous to the carding. If this does not give the desired relief it would be a good plan to run the solidonia through a picker in order to shorten the fibers before mixing with the other material in the batch."

Knitting Department

THE KNIT GOODS SITUATION

There has been less interest shown this season than for several years past in the spring opening for 1916. There are many reasons for this lack of interest and one of the reasons is a very hopeful one for the manufacturers; namely, that their customers are very busy at the present time keeping one eye on sales for immediate consumption, while the other eye is very busy watching the fall business. About this season a good many buyers make inquiry as to when the lines will be ready. The manufacturers take this to mean they are ready to operate and get their new lines ready as soon as possible. Then they are surprised that the buyers do not show interest at once. These inquiries as a rule are simply to disclose when every line will be ready and do not mean that manufacturers should hustle and get their lines out as soon as possible.

The war has also some effect on future buying, but if business in the knit goods lines continues to improve, great interest will be taken in the spring opening war or no war.

Several lines are now ready and in some instances orders have been placed, but this refers mainly to staple styles and mill numbers which the jobbers have carried for a number of years and are so familiar to their road men and customers that the jobber's stock would look incomplete to their own men if they substituted other qualities or dropped them entirely from their line.

Prices will no doubt be the same as the low prices made for this spring which in many instances were lower than the opening prices at which the original business was placed. Unless something unforeseen should confront us, these prices ought to be satisfactory to the buyer when he decides to operate. The immediate business of the jobbers during the past few weeks has been very satisfactory. The low stocks necessitate free use of the wires instead of the mails and all the orders say "Must have at once." The consequence is that mill stocks are about exhausted of desirable underwear. There has been more underwear ordered by express this year than ever before which shows stocks in the hands of the jobbers are reduced to below the minimum. This will be a help to the manufacturers for the next spring season, as they will not have to combat the buyers' arguments that they are going to carry over a lot of merchandise and only want to assort stock, which has so often been the case in the past and one of the hardest arguments for a salesman to overcome.

If underwear manufacturers in making up goods for stock could carry them in such a way that they would assort them according to demand, it would frequently obviate the necessity of putting a reduced price on the merchandise in order to move it easily. In the middle of a season, a buyer does not want to take an arbitrary assortment and load up on sizes with which they are well supplied, in order to get what they may need. This refers particularly to men's, boys' and misses' underwear. In the ladies' goods there are only a few sizes, so these can easily be adjusted.

Hosiery conditions are improving very materially and stocks are low on all classes of desirable merchandise. Silk hosiery has shown more improvement than other lines and there is virtually no stock on hand unless it be in ladies' fiber hose with a ten to twelve inch boot which can only be sold when the buyer cannot get a longer silk boot and must have something immediately. Not long ago this was the longest boot to be had in the 25 cent silk grades, but now the manufacturers are giving a much longer boot that can be retailed at that price with a good profit to both the jobber and the retailer. More manufacturers of fiber hose have been obliged to advance their price on account of the sharp advance of fiber yarns as well as dye materials.

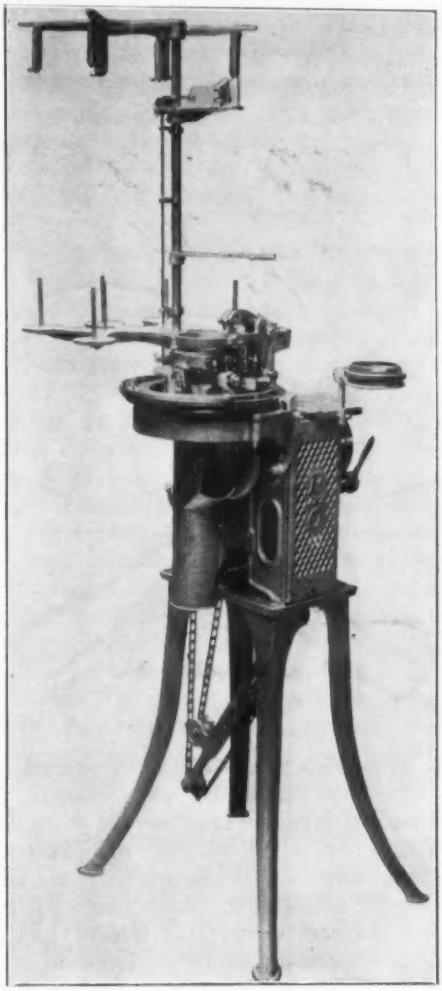
Sweater coat manufacturers are holding firm at their advanced prices when they are short the necessary grade of wool or worsted yarn. Unfortunately, there is not a general advance among all the manufacturers. Some are long on low grade yarns and short on medium and high grades and their competitors' stocks of yarns might be just the reverse, so what one manufacturer advances, his competitor may offer on the old basis.

The sweater business has improved a good deal during the past few weeks. As soon as stocks in jobbers' hands that were carried over last year are absorbed, the buying will be more active. Some manufacturers have coats on hand that were made up for the exporters and were either late in delivery or were not paid for on delivery, but these are mostly in large sizes and not so easily disposed of at a profit, unless the manufacturer will assort the sizes up to suit home consumption.

NEW PAXTON & O'NEILL KNITTING MACHINE

The illustration shows the new revolving cylinder machine recently placed on the market by Paxton & O'Neill, 541 North Third St., Philadelphia, Pa. It was exhibited at the Knitting Machinery Exhibition in Philadlephia last month where its many novel features attracted much interest and attention. It is designed for making ladies' hosiery and half hose. It is a five fingered yarn changing and plating machine. The yarn changer fingers are at all times outside the path of the needles so that it is impossible to come in contact with them even when raised in the process of making the heel and toe. The main drive is a simple mechanical movement free from complicated gearings. The drum, which controls many of the moving parts, is concentric with the cylinder and every part is easy of access for adjustment. This is a new feature of hosiery machines which will be appreciated.

Another feature upon which much stress is laid is the high speed and easy action of the machine when working on the heel and toe. The Paxton & O'Neill machine has always been noted for the excellence of its mechanical construction with resulting ease and smoothness of operation and the high character and fine quality of the fabric produced. This new machine embodies all those good points and it maintains the easy angle of pickers and smooth rocking sinkers peculiar to the Paxton & O'Neill machines for the last twenty years. The goods made on this machine show the quality of its work and among the many visitors to their booth were manufacturers using the machine who had the highest words of praise for it. Its adapt-



A NEW REVOLVING CYLINDER KNITTING MACHINE

ability for fine gauge silk work was favorably commented on by them.

IMPROVED UNION SUITS

Three methods of manufacturing union suits has recently been patent in this country. The first one is shown at Figs. 1, 2 and 3. One object of the invention is to increase the comfort in wearing a garment, preferably formed of relatively non-extensible material, such as cotton, nainsook, muslin, linen or the

FIG. 1

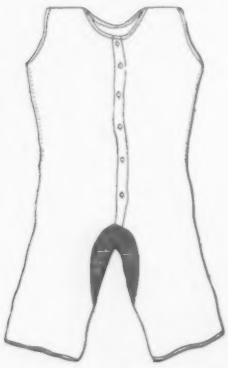
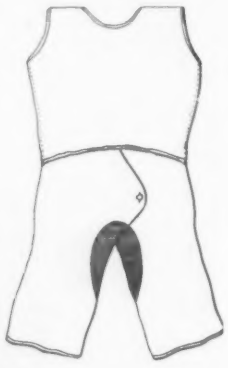


FIG. 2



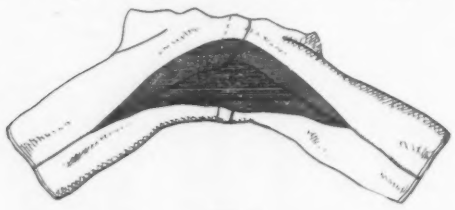


FIG. 3

like, so that it will not bind or inconvenience the wearer in the crotch, when stooping or moving the legs; to improve the construction of a union suit without materially increasing the cost of manufacture thereof; to provide a garment which besides being convenient and comfortable, is cool; and to provide a garment which is simple in construction, inexpensive to manufacture, strong and durable.

A further object is to provide a union suit formed of relatively non-extensible material and having a crotch formed of highly vertically elastic and of sufficient area so that the ordinary vertically elastic waist band may be dispensed with, without inconvenience.

Fig. 1 is a front elevation of the union suit; Fig. 2 is a rear elevation; Fig. 3 is a fragmentary front elevation of the lower portion, with the legs spread apart.

The body portion is provided with the usual arm and neck holes as shown. One of the front sections is provided at its inner edge with a flap to cover the forward opening and having button-holes to receive buttons secured to the other front section. The flap extends downward in proximity to the elastic crotch, as shown.

The legs of the union suit are formed of front and rear leg-sections, stitched at their contiguous edges, as shown. The front leg-sections are formed by a continuation of the front body-sections, while the rear leg-sections are connected or stitched to the rear

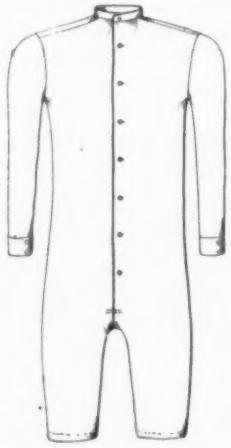


FIG. 4

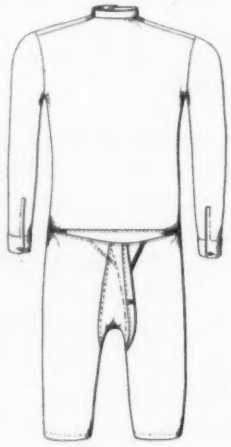


FIG. 5

back section as shown. Below and adjacent to the back waist stitching is a posterior opening adapted to be closed by a posterior flap carried by one of the rear leg-sections. This flap is provided with a button-hole to receive a button attached to the other rear leg-section.

The second construction is shown at Figs. 4 and 5 and is described by the inventor as follows: This is an improvement in garments in which the upper or outer shirt from the same piece of goods is used in the making of the under garments or drawers. One is to provide a negligee shirt manufactured in one continuous piece, with the under gar-

ments or drawers and which is provided with means for forming a reliably closed crotch.

Fig. 4 is a front elevational view of an approved form of the garment; Fig. 5 is a rear elevational view disclosing the opening form in the rear and means for holding the same closed. The front portion consists of the two similar but oppositely disposed gores or side pieces, the latter of which over laps the former and has means by which it is remov-

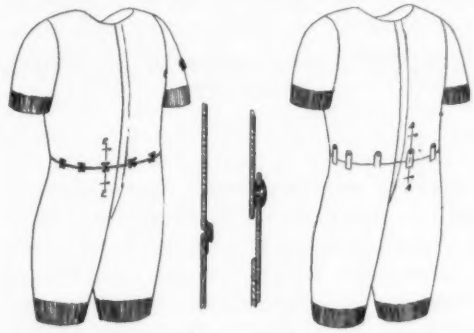


FIG. 6 FIG. 7 FIG. 8 FIG. 9

ably connected. The back portion is composed of the breadth and the leg pieces which are connected to the breadth by means of the gusset. The leg piece is sewed, stitched or otherwise secured to the gore of the front portion along the seams indicated at and the leg piece is similarly secured to the front gore along the seams. The outside seams are continued upwardly to the armholes formed by suitable cut out portions in the front and back and also serve as the connecting seams between the upper portion of the gores composing the front with the back breadth. The usual shoulder gusset shown in the front and the back above the armholes and the customary collar band is stitched in the usual position upon the upper part connected to the side gores. The customary sleeves are adapted to the sides of the armholes and terminate in the ordinary cuffs.

The leg pieces are not stitched together or secured along their meeting edges at the rear portion of the garment, but loosely overlap each other. The flap piece is stitched or suitably secured to the leg piece along the seam and serves as a closing portion for the opening thus created. Buttons are provided for securing this flap portion to the leg piece but it has also been found desirable to provide pieces of elastic web. One of these is secured at one end to the gusset at the right of the medial line of the garment and at the other to the flap and serves to hold this flap portion smooth over the opening. The other webbing is also secured at one end to the gusset at the left and at the other to the free side of the leg piece, this piece of webbing being set under the flap and the leg piece. To open the rear portion of the under garment the wearer has but to unfasten the button and to pull back the flap against the tension of the webbing. When this pulling ceases the flap is returned to place by the webbing.

The third suit is shown at Figs. 6, 7, 8 and 9. The improved garment may be knit or woven. In completing the garment, an upper or shirt part and a lower or drawers part are provided, these parts being connected without having the various parts overlap so that the usual smooth close-fitting effect of the union garment is presented. The connection of the parts may be varied considerably, as by the use of connecting eyelets, clasps, or ribbons arranged through suitable perforations, or an extra section may be inserted having suitable securing means to be secured or connected with the various parts.

Fig. 6 is a perspective view of the undergarment; Fig. 7 is a section through Fig. 1 on the line 2—2; Fig. 9 is a perspective view showing a slightly modified form; Fig. 8 is a section through Fig. 3 approximately on the line 4—4.

The upper and lower parts of the garment may be formed with their edges having a selvage, or with a binding, as desired. When these two parts are placed together, as shown in Fig. 6, the entire garment discloses substantially a one-piece garment, though divided into two parts. The parts are connected by hooks and eyes. Clasps Figs. 7 and 8 can be used for securing the parts together. The clasp is formed with a stud and a socket. One part of the clasp is secured to a tab and the other part is secured to part of the garment, the tab being sewed to the garment.

ELIMINATING UNNECESSARY WORK IN THE SEWING ROOM

BY HAWICK

When going through the sewing room some weeks ago I noticed there was considerable time lost because some of the operatives had the habit of leaving their places. The shipping and stock room was on the first floor as were the presses and packing tables, while the second and third floors were occupied by the sewing rooms. We had cut holes in the floor at the ends of the sewing rooms and lined them with smooth boards, making chutes through which the work was

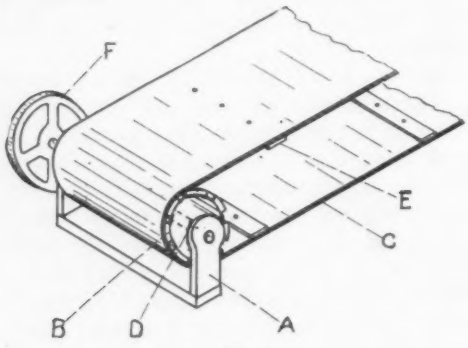


FIG. 1

dropped to the pressing and packing room. Some of the garments would be finished at the center of the room and the finished product would have to be carried, sometimes ten to twenty yards to these chutes. This caused a waste of time and also encouraged the operatives to stop and talk on the way back to their machines. I hired a boy to carry this work, but as this did not keep him busy, he also lost a lot of time.

I finally decided to arrange some kind of a carrier. On each end of two pieces of shafting about 4 inches long we put wooden pulleys about 10 inches in diameter. On these pulleys we nailed thin boards, as shown at Fig. 1. A is the upright shaft holder; B, boards nailed to wooden pulleys; C, bed made of heavy canvas; D, wooden pulley; E, showing manner of holding belt together; F, showing pulley by which the belt is run. This formed a wooden pulley 17 inches wide and 10 inches in diameter. We then placed these pulleys in upright hangers at each end of the machine tables and made a belt by taking heavy canvas duck 24 inches wide and doubling each side under so that it would meet in the center on the under side. This was held in place by rivets and thin boards on the top side. The belt was then made to revolve by placing a pulley, F, Fig. 1, and running a belt from the machine shafting. This belt or carrier has proved very serviceable and revolves when the machines are running. It has saved a great deal of time.

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PRODUCTION AND COSTS IN AN UNDERWEAR MILL

BY TRENTON

The question of cost of a knitting mill comes up very frequently. Some inquirers want to know about the production, prices, profits and selling plans before they have determined the location of the mill, class of goods to be made or the necessary equipment. It is a good idea to estimate the cost in a plant to produce 100 dozen a day of a certain class of goods with cost of labor in a location that has been decided upon. We will start with the location for the proposed mill. Experienced help or green help determines the first year's profits. Location in a knit underwear section means experienced help. A mill was started in a certain section of Philadelphia in 1900 on a ribbed garment. When running full they employed about 150 hands and 75 per cent. were experienced help. This concern showed a good profit the first year. Another mill was started in a small city in Virginia and about the only experienced help they had was the forelady finisher, boss knitter and superintendent. They made a light weight ribbed garment and lost money each year for four years when they gave it up. The help for the most part would not work steady and the continual changes made matters worse. I know of another mill that started in a knitting center of the Mohawk Valley. The superintendent was about twenty years old and did not know one machine from another. The help taught him about all he ever knew of the operating end. The superintendent's father started the mill for the son. He was an old superintendent himself and had spent

twenty years as head of one of the largest ribbed mills in the country at that time. This concern made money the first year.

The production depends on the class of goods. Children's goods are made up quickly compared to a man's union suit. A ladies' light weight vest would compare as about 3 to 1 against a ladies' heavy union suit. Hand finished knit underwear takes extra time. Knitting has its variations also, for a light weight webbing can run a third faster than a heavy fabric on the machine.

I will touch lightly on the material used, such as buttons, tape, edging, yarn, needles, etc. The prices of these articles, with the exception of yarn, is nearly always the same, but care is necessary in buying. A poor grade of yarn bought because it is cheap is the most expensive yarn there is. Buying yarn, made to sell at a small margin of profit, is a good means for losing money. At one time I was running a set of six knitting frames on a jack spun yarn, using latch needles without stop motions. I was supposed to keep those frames running, but it was impossible. The yarn was so poor it would not hold together, the ends were always broken and the frames stopped with the stitches off the needles. There were about 60 frames in the room and they were all alike. A roll of the fabric should make seven to eight dozen, but in this case the cutters were lucky to get two dozen. This was an army order and the firm lost thousands of dollars because they could not fill the contract. The buyers took a chance on a cheap grade of stock and lost. A set of knitting frames on ladies' light weight ribbed goods should give from nine to fourteen dozen a day, according to conditions. If round sleeves are used, the sleeve machines must be added. For finishing fine light weight goods, the following machines are necessary: Seamers, cover seamers, shell stitch, crochet, buttonhole, button sewer and finishing. If lace for neck is used a lace sewer must be added. The following additional machines must also be added: A pipe roll turner, a cutting machine for facing, a button stay folder and cutter, a steam press and for bleached goods a bleach tub with the necessary wash tubs and dry rooms. A boiler for steam and hot water should also be added and an electric cutter. The following materials are also necessary for the knitting processes: Knitting and sewing needles, tape, edging, buttons, bobbins, soap, lime for bleach, cotton, silk and mercerized thread, goods for facing and button stays, boxes for shipping and packing and last but not least, the yarn. For heavy weight garments the above could be changed to extra dials and cylinders for the knitting machines, with heavy needles, a few extra sewing machines for the different finish necessary, and a heavier yarn.

Regarding profits, there are no rules or regulations that one could follow to prevent the many losses that occur in mill management. A few examples of sudden losses might be of some help. A certain mill, up to date in all particulars, ran day and night in the knitting room. The knitters would take bad rolls up on the roof and throw them down the wide chimney. The fireman after a week of trouble located the reason for the forced draft. He fished around with a hook and pulled up a roll of knit goods, and in all he got about six rolls. In this room three rolls were taken out of the oil tanks. This was a loss of nearly $200. The goods could not be cut up even for seconds. There are other ways to lose money. The amount of waste a winder, knitter or cutter makes is an important factor. Others include knitting needles at one cent each lying around the floor to be swept out, dripping oil, dirty floors and shelves, sloppy operators and the "don't care" help generally. This list could be extended indefinitely.

Artificial silk yarn imports into the United States have increased rapidly—$825,621 in 1911, $1,560,566 in 1912, and $2,923,356 in 1914.

The first export of cotton was from Savannah. An exportation of seven bags valued at $17.64 per bag was made from Charleston between November, 1747, and November, 1748.—"Cotton."

INCANDESCENT GAS MANTLES

Editor Textile World Record:

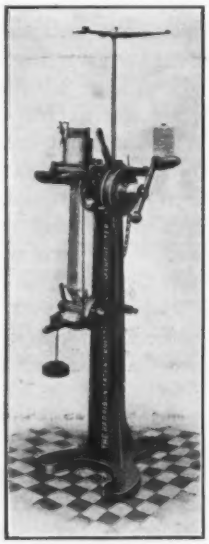
I would like to have a description of a plant to manufacture 1,000 gas mantles daily, giving the cost of the equipment and a statement of the operatives. Belfort (2453).

"Belfort" does not say at what point he is going to begin the manufacture, or at what point he is going to leave off. To judge from the quantity named it cannot be his intention to make his own yarn and it is quite feasible to buy ramie yarn in counts and twists and quality suitable for gas mantles. One English concern buys raw ramie in the ribbon, which it degums, combs, roves and spins, thereafter knitting the yarn into "stockings," impregnating them with minerals that are refined on the premises, looping them with asbestos and turning out the stiffened mantle ready for the gas jet. Others buy yarn and knit it into stockings to sell to those who carry on the chemical and finishing processes.

The purpose being a very special one the yarn has to be carefully selected for its freedom from ash and it is necessary to arrange for a supply of consistent quality in this respect. If the yarn is bought on cheeses there is a saving of winding which affects the quantity of help required. After winding comes the question of knitting, which becomes in part a matter of the kind of mantle made. A maker of machines for the purpose lists three types: (a) for plain mantles; (b) for double-stitch tucked mantles; (c) for triple-stitch.

Varying with the sizes and textures the production from the knitting machine is put down at 180 to 360 mantles per hour. It is observable that several manufacturers put mantles on the market with special reinforcing threads down the sides. A single-head machine ought to be amply sufficient for the output mentioned and it is for the inquirer to judge whether production on this scale could be economically advantageous. Where mantles are made in a large way there are several knitting heads arranged along a bench. The English prices of the three hand-knitting machines named run from about $77 to $155 on the pedestal. There are extras in the shape of apparatus to tighten the necks, automatic apparatus for turning the work inside out and special sewing machines for sewing the necks and buttons of the mantles; the last named costing some $63. Obviously no high number of operatives is needed for such an outfit.

For the rest, the matter resolves itself into one of the processes adopted. Under the Welsbach system the cylinder or stocking of net has to be steeped in an acid solution long enough to impregnate the fibers with the nitrates of thorium and cerium, but not long enough to rot it. The stocking is then sewn with asbestos thread and the vegetable fiber is burned away. The mantle is lit at



MACHINE FOR KNITTING GAS MANTLES

the top and allowed to burn downwards and is then burnt from the bottom by an interior Bunsen flame to harden the crust. Being in this condition too tender for transit the mineral framework is stiffened by a dip into collodion and castor oil and boxed in its tube. The burning-off process is used to convert the nitrates into oxides. In the Plaissetly system burning-off in the factory is avoided by steeping the impregnated stocking in an ammonia solution whereby the nitrates are converted into hydrates. The burning-off is then done by the consumer and the trouble

of burning, shaping, hardening and collodionizing is avoided. In the circumstances specific advice can hardly be given. It has to be assumed that the inquirer has his own knowledge on the chemical side and has satisfied himself that his method will yield a satisfactory article without involving him in patent litigation. In manufacturing in a small way the competition of those who manufacture on a large scale and employ highly trained scientific assistance has of course to be reckoned with. Wessex.

KNITTING SILK PLATED COATS

Editor Textile World Record:

We want to make up a worsted and silk plated knitted garment that can be brushed and will have the appearance of a silk coat with the desired luster. Can such a coat be made on a five gauge machine, and can it be made with woolen and silk yarns instead of worsted and silk? Also please advise which yarns are best for the purpose and what the cost would be. Knitter (2479).

A silk plated coat can be made on a five gauge machine, but the result would be a heavy and expensive garment. A five gauge would be almost a jumbo stitch, no matter what cut of cylinder or plate is used. I assume that "Knitter" is using circular machines. If this garment is to be brushed on the outside a soft twist silk should be used and a soft twist means trouble. Fiber silk causes more trouble and waste than the natural silk, but it can be made to run. A good grade of woolen yarn should answer as well as worsted. If this coat is to be made with a plain stitch great care should be used in plating, otherwise the silk luster will be lost. On fiber silk more or less tension is generally used to straighten or lay the silk in the right position as it leaves the yarn guides.

I have never heard of brushing such a coat, but that does not mean that it cannot be done. The ordinary brushes would hardly do, even with a soft twist silk. I remember having seen a coat on the market at one time, made from a worsted and fiber silk, with a tuck stitch effect in colors. This was made on a 12-gauge machine, five needles to the inch. The face of this garment was silk and being made with a tuck stitch, every other feed was silk, saving half the silk. All of these garments were made in two colors. With black wool and white silk the silk would show on the face in vertical stripes when slightly stretched. With the plain stitch these stripes would not show. The tuck stitch also gave more weight.

It would be difficult for me to say which yarns are best for the purpose, as I do not know the price or the weight of the garment. The yarn should, however, be a three-ply, say a 3/34s worsted and a 3/16 silk. Trenton.

A silk plated and brushed coat can be made on a half-cardigan stitch. Use a 1/16s worsted and a 11-end organzine silk. To make the coat from woolen yarn and fiber silk on a 5-gauge machine, it is advisable to use a 24s wool and a 150s fiber. This makes a much better looking garment than using a 16s worsted and 11 end organzine. "Knitter" will find with proper tensions on the fiber silk he can make a much better garment than with organzine silk. I do not mean by this that it is better to use fiber than silk, but I do say that by giving the proper tensions on the machines, which I judge to be flat bed, wood fiber and wool will work very well together and will not have the tearing effect on the garment as do worsted and silk.

Napping or brushing cannot be done on a silk plated garment. Good results can be obtained after the goods are knit by placing them in a cylinder vat or washing machine, adding about 5 gallons of soft soap to 15 gallons of cold water and letting this work for about two hours or until the goods feel spongy. Then remove goods and run them through a dryer. This method gives the appearance of brushing and does not have the tearing effect caused by using the brusher.

One concern making athletic goods and also cloth for ladies' and gents' suitings both on spring and latch needles is using the above method to obtain the brushed effect. This concern uses 2 wool to 1 silk. The goods after going through this process have a silk luster which cannot be obtained on a brusher. Taconia.

The exportation of artificial silk to the United States from the Brussels district increased in value from $173,106 in 1912 to $367,294 in 1913.

Dyeing, Bleaching, Finishing, Etc.

THE DEVELOPMENT OF COAL-TAR DYESTUFFS

BY BETA-NAPHTHOL

The wonderful development that the coal tar dye industry has reached in Germany has received considerable attention from many quarters during the last few months, as its immensity has impressed itself upon all those who have followed the industrial events in this country, especially those who are dependent upon dyestuffs. The remarkable manufacturing plants that have gradually grown from modest beginnings do not fail to command admiration from all who give them any consideration. The unparalleled organization, comprising administrative, scientific or research, technical and commercial departments, so coordinated as to work in perfect harmony, one with the other, and without any overlapping or confusion, can be regarded as a model worthy of imitation, either on a small or large scale.

While this admiration commanding exhibit is a German production, it is likewise interesting to keep before us the fact that this wonderful coal tar color industry did not have its origin in Germany, nor did many of the great minds that guided it to a secure foundation, receive their training in that country. Organic chemistry—that grand division of chemistry that serves as the foundation of the color industry—had its beginning many years prior to the world-famous discovery by the then William Henry Perkins, in 1856, but that discovery marked the starting point from which all subsequent dye discoveries commence. While there were known as early as 1856 many artificial organic chemical products that possessed color, yet none of them was regarded by dyers as dyestuffs for textiles.

It was the discovery of the dye "Mauve" from aniline by Perkins in that year that proved to be the great impetus that led a host of other chemists to devote their time to chemical investigations that ultimately led to the discovery of a number of products which blazed the way leading to the present state of the dyestuff industry.

While many dyes were discovered, due to the efforts of those workers, some being of far-reaching importance, others stand out in more or less prominence as marking the beginning of epochs, notably the following:

Aniline. As interest naturally centers about this substance, it may be of importance to recall that it was first observed in 1826 by a chemist named Unverdorben, who was experimenting with indigo. The fact that it was discovered to be a constituent of coal tar is due to Runge, in 1834. It was not until 1840, however, that the name aniline was connected with the products of either Unverdorben or Runge. The name aniline is due to Fritzsche.

Perkin's discovery of "Mauve dye" was made during the Easter vacation of 1856, and is recorded in the British Patent Office, as follows:

A. D. 1856——No. 1984——Dyeing Fabrics
Provisional Specification left by the said William Henry Perkin at the Office of the Commissioner of Patents, with his Petition, on the 26th of August, 1856.

I, William Henry Perkin, do hereby declare the nature of the said invention for producing a new colouring matter for dyeing with a lilac or purple colour, stuffs of silk, cotton, wool or other materials to be as follows:—

Equivalent proportions of sulphate of aniline and bichromate of potassa and to be dissolved in separate portions in hot water and, when dissolved, they are to be mixed and stirred, which causes a black precipitate to form. After this mixture has stood for a few hours, it is to be thrown on a filter, and the precipitate to be well washed with water to free it from sulphate of potassa, and then dried. When dry it is to be boiled with coal tar naphtha to extract a brown substance, from it, and this process must be repeated several times, until such substance is entirely separated. The residue is then to be boiled with methylated spirit to extract the colouring matter, and the spirit afterwards to be separated from the colouring matter by distillation. The colouring matter thus ob-

tained is of a solid bronze colour. The colouring matter, when required for use, is to be produced with a given quantity of oxalic or tartaric acid and moistened with a little methylated spirit, and is then thrown into boiling water.

The materials to be dyed are then to be immersed, the solution to be kept boiling, and when dyed they are to be washed with cold water to cleanse them from the acid. The materials thus dyed are of a lilac or purple colour, of a very durable character, the tint or shade of which may be varied by the quantity of colouring matter used.

Truly a patent of unmistakable simplicity, considering its far-reaching importance and one that fully justified the tribute paid to Perkin by the civilized world of forty years later, in 1906.

Aniline black dyeing must be credited to John Lightfoot, an Englishman, who patented the process in 1863, and which, with very slight modifications, remains essentially the same today.

Alizarine was discovered in madder plant by two Frenchmen, Colin and Robiquet, in 1826, while Dumas and Laurent, also Frenchmen, were the first to discover anthracene in coal tar, and it was not until 1866 that Graebe and Lieberman identified a hydrocarbon body obtained from the madder plant as the anthracene of Dumas and Laurent. Perkin made alizarine commercially in 1869, and sold his patent to Brooke, Simpson and Spiller.

What ultimately led to a most important class of commercial dyestuffs, was the discovery by two other French chemists, Croissant and Bretoniere in 1873, and which forms the basis of all the so-called sulphur colors by whatever name known.

The azo colors are due to the discovery of Peter Greiss, in 1858, and from which the immense industry of these dyes dates. It was in 1887 that the azo colors produced on the fiber were given to the world by Arthur G. Green, and which were designated "Ingrain" colors, the most prominent of which was Primuline, since followed by a host of others requiring the use of the now much wanted "developers."

Alkali Blue, a dye once of great importance for textiles, was discovered in 1862, by Nicholson, an English chemist. This dye is now more in demand by makers of printing inks than for dyeing.

The later discoveries, including the classical work on indigo, leading ultimately to the commercial production of the synthetic product, and its later influence on the natural article, is too recent an accomplishment to record here, as it is familiar to all, while the production of a class of colors from carbazol (a product that was to some extent a nuisance in the dye plants) colors that resist the action of hypochlorite bleach, is an advance of the highest importance.

Thus while we must concede that Germany has outstripped the rest of the world in artificial dye making, we must not by any means discredit the work done by chemists of other countries, as many are apt to do. It should be remembered that the very greatest work done in dye development, from 1856 to 1876, was accomplished in Great Britain by chemists of British, French, German and other nationalities. During this same period, due to the exceedingly chaotic state of the patent laws of the aggregation of German states, and which were not unified until 1876, the fruit of many important dye discoveries made elsewhere than in Germany, were appropriated in that country to its advantage. This condition was materially favored by the attitude of the British business man, who, as an eminent writer once put it, "cared more for the benzol market than for the benzol theory."

It may not be generally known that the largest color works in the world, existed for 14 years after the Perkin discovery in England, being the plant of Messrs. Simpson, Maule and Nicholson. It is also of interest to note the other English works were those of Roberts, Dale & Co., in operation before 1860. Read, Holliday & Sons; Dawson; Williams, Thomas, and Dower; Levinstein, founded in 1865.

Nicholson, of alkali blue fame, a most capable chemist, was the manager of the Brooke, Simpson, and Spiller works. The great Hofman; Dr. Caro, later of the Badische; Dr. Martius, later of the Berlin Company; Leonhardt, who later became associated with the Cassella works; Peter Greiss, of azo color fame; the recently deceased Dr. O. N. Witt, all received their early experience in the dye industry in Great

Britain, and which was put to such good use later in Germany.

It is further interesting to note that the great minds that have from time to time directed the great German dye plants from a commercial point of view, were not chemists, but rather merchants. The Badische traces its origin to the brothers Klemm, who were indebted to Sigl for their commercial inspiration. Bayer, of the Elberfield Company was no chemist. Cassella was essentially a firm of business men, while Meister, of the famous Hochst works was at one time a merchant in Manchester, England.

Regarding the proposed efforts to manufacture coal tar dyes in the United States from domestic raw materials, much has appeared of a most misleading character, due to ignorance of the facts on the part of reporters. There is no doubt but that, in time, there will be a marked extension of American dye making, and that our domestic raw materials will be given a "place in the light," and command more respect than they now do.

There seems to be current at the present time a semi-organized attempt to discourage any proposition leading to the manufacture of coal tar dyes here, but it is regarded by those in a position to form an opinion in the matter, that coal tar dye making will, in the future, be more extended than at presnt. There is no doubt but that chemical works will gradually be started and financed, the produce of which will be the much talked of "intermediates" necessary for production of finished dyes.

While it is the desire of some enthusiasts to convince us that dye making is "about a one nation business," and in consequence properly belongs to Germany, many keen sighted business men regard it otherwise, and entertain the idea that if we have the raw materials and the accessory chemicals in this country, we should avail ourselves of them and begin the expansion of our own industry. And it is believed that it will be done.

A DYEING PROCESS

A machine for dyeing piece goods has recently been patented in this country and has for its object the production of a uniform shade throughout the goods with a thorough penetration of the material. The inventor describes the process as follows:

Fig. 1 is a longitudinal vertical section; Fig. 2 is a transverse vertical section through the apparatus shown in Fig. 1; Fig. 3 is a detail of a portion of the drum; Fig. 4 is a detail showing a portion of the rim of the drum.

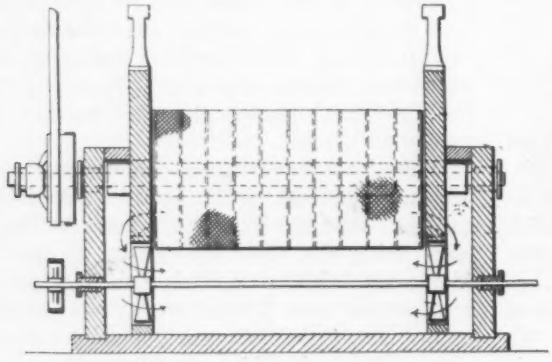


FIG. 1

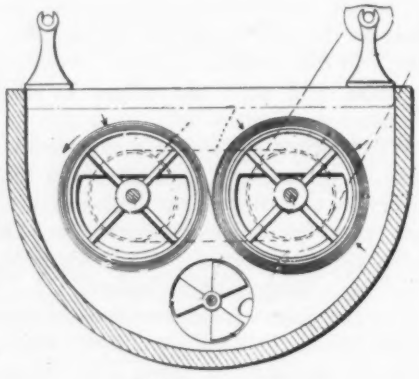


FIG. 2

The apparatus comprises a vat having end walls between which are two drums. These drums are built on spiders fastened to the shafts. The ends of the drums are open and the length of the drums is such that each substantially bridges the distance between the heads. In this way the extremeties of the drum close off communication between the space around the drums and the interior of the drums adjacent to the heads. The heads are provided with openings and the

vat is formed with false heads, which are inclosed so that conduits are formed at each end, communicating with the interior through the openings. In the lower part of the heads openings are formed in which are mounted impellers attached to a common shaft which is arranged to be rotated from the exterior.

The outer surface of each drum is built up by attaching longitudinal bars on the rims of the spiders as indicated in Figs. 3 and 4. A continuous fine wire is wrapped on these

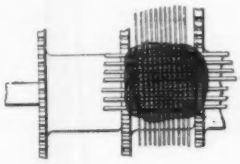


FIG. 3

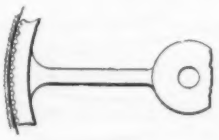


FIG. 4

rods about the drum. An inner covering of coarse mesh wire gauze is laid on this wire. Over this is placed an outer cover of fine mesh wire cloth.

The fabric to be dyed is wrapped upon one of the drums. This may be accomplished while unwrapping it from a roller supported on bearings on the vat. This coil is formed on the right hand drum in Fig. 2. The clutch of the right hand drum is then thrown open and the corresponding clutch of the left hand drum is closed. The end of the web is then attached in any suitable manner such as by pinning it to the surface of the left hand drum and the belt is then driven so as to rotate the left hand drum in the direction of the arrow. This winds the web from the right drum to the left drum, so that the layers of the web on the right hand drum pass over and form a coil of layers on the left hand drum. While this is taking place, the shaft is rotated so that the impellers which are of opposite pitch draw the dye liquor from the ducts into the space surrounding the drum.

This produces a circulation in the direction indicated by the arrows, and produces an excess of hydrostatic pressure on the outer sides of the drums which forces the dye liquor through the layers of the fabric into the interior of the drums. After the web has completely passed from one drum to the other, it is passed back again in the same manner, the direction of rotation of the shaft being the same as before so that the direction of the circulation of the dye liquor is the same as before. In this way the entire length of the web on one side is subjected to direct contact with the bath under hydrostatic pressure, forcing the dye liquor through the fabric from that side. On account of the fact that the web is wrapped in opposite directions on the two drums, it will be seen that the entire length of both sides of the cloth will be brought directly in contact with the bath and subjected to hydrostatic pressure, forcing the dye through the fabric. In this way a very efficient and uniform dyeing effect results.

DYEING AND FINISHING WOOL FABRICS

BY F. SADLER

In the Dyer and Calico Printer

Vat dyeing for woolens will be on the increase when the synthetic colors used for that purpose are cheaper, while the limited range of Helindone and other dyes of the same class will no doubt be so improved that brighter shades will be available. There will always be more care and work entailed in woolen dyeing than with cotton fabrics. One reason is the greater thickness and bulk of the goods, another is the elastic properties of woolens which prevent them from being run from one batch to another without creasing on the roll, a fault which in the case of worsteds would be fatal. Hand hawking has now been superseded by the machine, thus rendering the whole work much less laborious, but still requiring the constant watch of a couple of attendants to keep the fabric running straight and at open width.

Under the old system of hand work the manipulation of a piece in the vat was highly skilled work and no child's play, as with a hawking-iron in each hand the dyer had to keep the cloth in constant gentle motion, never allowing it to come above the surface of the liquor and at the same time keeping it at open width. Now woolen cloth when

immersed in dye liquor is of very nearly the same specific gravity as the liquor itself, consequently it floats about and is swayed by the slightest current in the bath. All this made hand hawking more difficult, as the whole mechanism may be readily lifted clear of the liquor. As seen in the figure, a wood scray extends on both sides of the rollers, the object of which is to keep the floating cloth beneath the dye. Following the line of

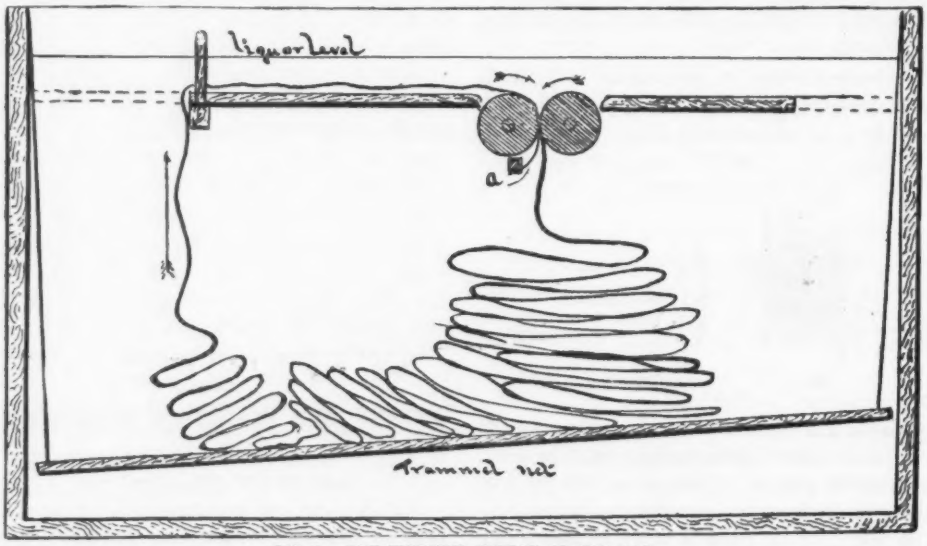


FIG. 1. THE WORKING SECTION OF THE VAT

cloth had to be kept up within a few inches of the top while being opened out, and then the folds well pushed down out of the way. the arrow, the cloth is drawn over the scray top and down again between the two wood rollers, the work of which serves a double

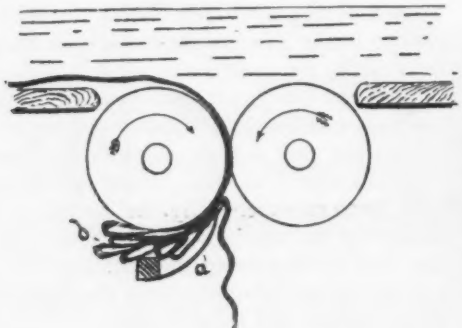


FIG. 2. ROLLERS IN THE DYEING VAT

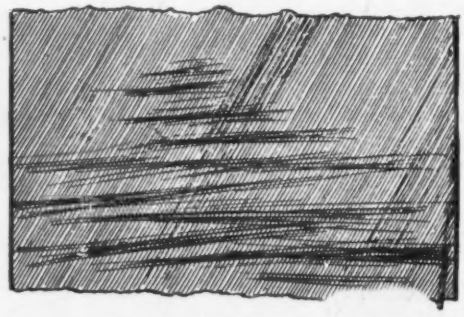


FIG. 3. SHOWING THE CHAFED APPEARANCE OF THE CLOTH

Fig. 1 shows the working section of a vat and hawking machine, the latter being of the most simple construction, consisting merely of a pair of wood drawing rollers worked by gearing, and swinging on a hinge balanced by a heavy counterpoise weight so that the purpose, that of drawing the fabric through the liquor, and of assisting the impregnation by pressure. After passing between the two rollers, the cloth should, in theory, fall to the bottom of the vat in folds, ready for again drawing up at the front. In practice it is

found that instead of leaving the rollers the fabric has a tendency to stick to them and so be carried round and round.

To obviate this a stripping device was necessary which, in the earlier types of machine, took the form of a long, curved copper blade, one edge of which lay close to the surface of the roller, while the other was secured to a bar beneath, A, Fig. 1. This device answered the purpose well enough when new and in perfect order, but by strain and wear was soon put out of adjustment, while the warping of the wood rollers made strict alignment between the two very difficult to keep. Very thin cloths were, of course, more difficult to deal with than thick ones, while the chance of getting fast between the stripping blade and the roller was doubled.

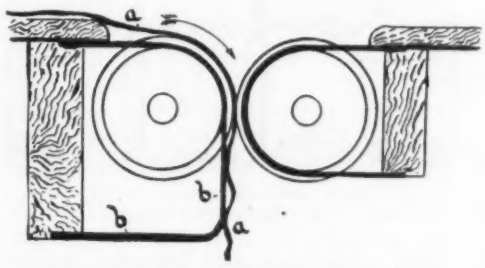


FIG. 4. A SECTIONAL VIEW OF A PAIR OF THE DRAWING ROLLERS.

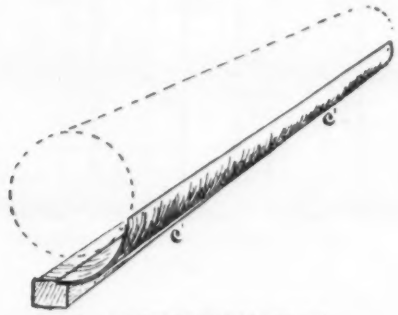


FIG. 5. A VIEW OF THE OLD STYLE COPPER BLADE STRIPPER.

Given the smallest space between the two, owing to a slight strain or buckling of the stripper, or by the rollers swelling or shrinking, and the cloth was nipped fast between the two directly.

Fig. 2 illustrates this, where the cloth has been caught and rubbed through between the stripper, A, and the roller, causing the stripper to become twisted, and finally to choke up the feed until the rollers refused to work. This causes loss and damage to the cloth, as chafed places appear where the fabric has been nipped and submitted to the friction of the moving roller, even if actual holes are not rubbed through. Quite apart from the damage done by cloth getting fast, there is, also, the almost certain danger of uneven dyeing and stains occurring, as part of the fabric is out of the dye liquor for some time while being freed, while the rest is immersed in the liquor. Stoppages from any cause are highly risky to the cloth once the dyeing has started, much more so than to the ordinary boiling vessel, where cold water can be run in at once where a serious breakdown occurs, whereas the value of the contents of an indigo vat prevents this measure being taken. Fig. 3 is an endeavor to show the chafed appearance of the cloth after being fast; the dark marks across are rough or chafed areas, for which there is absolutely no cure.

Thin cloths are always more likely to become fast and entangled than thick ones, and even the very slight currents in an indigo vat will at times cause folds to be floated up against that portion of the fabric which is being fed to the rollers, causing both to be fed in double. This is one of the reasons why a vat requires a couple of attendants to regulate the feed. The work of guiding the cloth necessarily means almost constant contact of the worker's hands with the liquor, and, at first, to new hands the action of the warm hydrosulphite causes sores. Rubber gloves are provided by many firms, but the men do not like them, and, besides being very expensive, their life is short, and holes are quickly worn between thumb and fingers.

Fig. 4 shows a sectional view of a pair of drawing rollers fitted with Turner's patent stripping arrangement, which does away with the drawbacks and danger of the old style. This improvement consists of a number of strong copper bands, both ends of which are screwed to a wood support, but which lie in grooves cut into the rollers, Fig. 6. As the copper bands are below the sur-

face of the revolving roller, the cloth does not come into contact with them at all, unless the fabric has a tendency to cling to the roller, when, of course, these guards push it off at the point they themselves leave the circumference of the roller. Fig. 4 shows the latest improved form of these strippers. In this it will be noted that the copper strippers, BB, are only in contact with the roller for about a quarter of its circumference, when they leave it and extend straight downwards for some inches, and are then bent at right angles. The figure shows the cloth, A, passing between the two rollers in the direction of the arrow. Immediately after leaving the nip of the rollers, the guides, BB, diverge from it downwards, and the cloth, AA, naturally has to follow on the line of these guards. Only one of the rollers has the projecting guards, as this, the intake roller, is always the one around which the cloth has a tendency to lap. The other is fitted with guards, as shown, which prevent any possibility of the fabric either wrapping around it or getting up at the back.

A still later modification consists of reducing the width of the copper bands and making them stouter, with, of course, a correspondingly deeper groove in the surface of the drawing rollers, as in Fig. 7. In this later design, the number of guards are considerably diminished, giving a larger drawing action on the part of the rollers by reason of a larger surface being in contact. In Fig. 7 the black portions, AAA, show to what depth the grooves are cut, and also show relatively the increased thickness of the strippers.

Fig. 5 shows a view (cc) of the old style of copper blade stripper. This was modified slightly in different makes, but the principle was the same; but the heavy work to which a hawking machine is required to stand, together with the deterioration of the rollers, which threw them out of truth, has caused this style of stripper to be abandoned in favor of the one described.

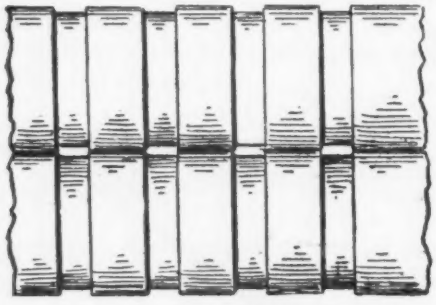


FIG. 6. COPPER BANDS IN THE DRAWING ROLLERS

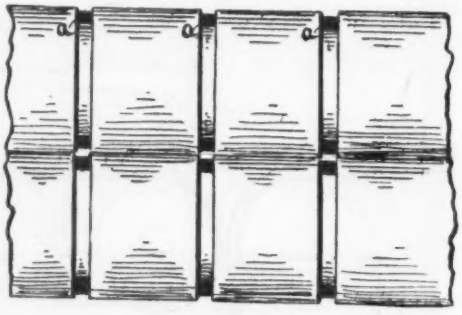


FIG. 7. ANOTHER TYPEOF COPPER BANDS IN THE DRAWING ROLLERS

WATERPROOFING YARNS AND FABRICS

An English process for waterproofing yarns and fabrics, recently patented in this country, is described by the inventor as follows: Non-explosive nitrated cellulose is dissolved in ether and methylated spirit. The mixture is then worked into a smooth jelly. A small quantity of "lucrate" oil is then added. The object is to produce a perfectly pure oil, free from water and all impurities, and which will blend with spirit and celluloid, for the purpose of admixture with waterproofing materials.

This lucrate consists of one of the following combinations and either combination may be used in the compound:

(a) Of an animal fat and a vegetable oil.
(b) Of an animal fat and a mineral oil.
(c) Of an animal fat and an oleaginous matter obtained from seed waste of all kinds.

The admixture thus produced will perfectly blend in the usual manner with spirit and celluloid, and is a very valuable industrial product.

(a) Animal fat derived from the sheep, ox,

pig, horse, or any other animal, is cleaned or refined by being boiled in water, and the fat thereon collected from the surface on cooling. It is then put into a copper and run down. To one hundred weight of this melted fat is added one and a half ounces of caustic soda and the whole mixed together. It is next reboiled, any water escaping in steam, and a perfectly clear oil is drawn off. It is then ready for admixture with any vegetable oil such as linseed, cotton and hemp seed, palm oil and colzerin (colza oil treated with caustic soda). To a definite amount of the animal oil while hot, is gradually added 1 1/2 to 20 per cent. of vegetable oil, being stirred during the process. All impurities or adulterations present in the vegetable oil rise to the surface and are skimmed off, so that nothing but absolutely pure oil is left. This admixture is now ready for use.

(b) A mineral oil such as paraffin oil, petrol, or the like, is substituted for the vegetable oil as described above, and is used in the following manner and proportions:

Paraffin oil	2½ to 20%
Petrol	2½ to 20%

When paraffin oil is used, care must be taken not to allow the temperature to rise above 180° to 200°. The impurities of the mineral oils are skimmed off as before described. On cooling, the mixture is run off into vats ready to heat up next day.

(c) A vegetable oil obtained from the waste of cotton seed, hemp seed or any oleaginous seed by well known processes, is substituted for the vegetable oil in combination (a) and is treated in the same manner as therein described.

The mixture is then diluted with methylated spirit to the required consistency. The diluted jelly is applied to the fabric or material to be treated by a spreading machine, or the material is dipped into the jelly and passed between rollers, or in the case of yarns or rovings, these are passed through the jelly and are preferably twisted in emerging from the bath.

When it is desired to make the treated materials non-inflammable, tungstate of soda is reduced to a very fine powder and mixed with a small quantity of lucrate oil. This mixture is worked into the jelly, preferably before dilution.

When it is desired to color the material the pigment is ground to a very fine powder and boiled in water. The scum is removed and the pigment allowed to settle, the supernatant water is decanted, and the residue dried at a gentle heat. The dried residue is mixed with a little methylated spirit into a smooth paste which is added to the nitrocellulose jelly before the addition of any oil.

The following proportions give good results:

Nitrated cellulose	lb. 1
Ether	lb. 1
Methylated spirit	gal. 1
"Lucrate"	gills 3
Sodium tungstate	ozs. ¾
Pigment	lb. 1

This solution is diluted as required, say with 1/6 gallons of methylated spirit before use. The process has several advantages over those hitherto proposed. A very transparent solution is obtained by which fabrics may be rendered translucent as well as waterproof, and, if desired, fireproof. Very light fabrics may be treated and are rendered gas tight as well as waterproof (and fireproof if desired) and are therefore suitable for the construction of balloons and air ships. The treated fabrics do not stick nor do they crack. When pigments are used a colored, but still transparent, solution is obtained. This is due to the use of methylated spirit instead of oil for mixing the pigment prior to adding it to the solution of nitrated cellulose. Suitable materials when treated can be boiled and disinfected with superheated steam without injury to their waterproofing or other qualities, and are suitable for surgical uses. The treated materials are without odor.

If it is not necessary that the treated materials shall be non-inflammable, other forms of nitrated cellulose such for example as transparent scrap celluloid may be used. This scrap celluloid is stored in a tank in methylated spirit and taken out as required for use. The soaking renders it limp and easily soluble in ether. No special time in

soak is necessary but it is best not to use the material until it has been in soak for a few days. This soaked celluloid is dissolved in the same proportions as the cellulose hereinbefore referred to and is treated in the same way.

Dye Recipes

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 206

GREY ON WORSTED DRESS GOODS

Grey on 100 lbs. worsted dress goods. Prepare dye bath containing

2 ozs., 245 grs. Amazo Blue.
(American Dyewood Company, 80 Maiden Lane, N. Y. City.)
1 oz., 137 grs. Amazo Brill. Red 2B.
3 ozs., 367 grs. Amazo Fast Yellow L R.
15 lbs. Glauber's Salt.
2½ lbs. Oil of Vitriol.

Enter at 120° F. Bring to boil in 1/2 hour. Boil 3/4 to 1 hour. Rinse.

The above colors are suited to all classes of sour dyeing on woolen or worsted goods, because of their good leveling qualities and their satisfactory fastness.

—÷—

Recipe No. 207

DARK GREEN ON WORSTED DRESS GOODS

Green on 100 lbs. worsted dress goods. Prepare dye bath containing

4 lbs., 1⅗ ozs. Amazo Green B.
(American Dyewood Company, 80 Maiden Lane, N. Y. City.)
2 ozs., 280 grs. Amazo Brill. Red 2 B.
2 ozs., 280 grs. Amazo Fast Yellow L R.
20 lbs. Glauber's Salt.
3 lbs. Oil of Vitriol.

Enter at 120° F. Bring to boil in 1/2 hour. Boil 3/4 to 1 hour. Rinse.

These colors are recommended for dyeing all kinds of wool goods by the acid method. They are level dyeing and of satisfactory fastness.

—÷—

Recipe No. 208

BROWN ON WORSTED YARN

Chrome Fast Brown B on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Chrome Fast Brown B.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
10 lbs. Glauber's Salt, Crystals.
5 lbs. Acetic Acid, 30%.

Enter at 140° to 160° F., raise to a boil in about 1/2 hour, boil for 1/2 hour, then add

1 lb. Sulphuric Acid, well diluted,

and boil for a further 1/2 hour.

Finally add

1½ lbs. Potassium Bichromate

and boil 1/2 hour longer.

Chrome Fast Brown B possesses excellent fastness to light and weather.

—÷—

Recipe No. 209

BLACK ON COTTON YARN

Naphtamine Fast Black K S G on 100 lbs. cotton yarn. Prepare the dye bath with

5 lbs. Naphtamine Fast Black K S G.
(Kalle & Co., 530 Canal St., New York, N. Y.)
30 lbs. Glauber's Salt.
1 lb. Soda Ash.

Dye at a boil one hour.

Naphtamine Fast Black K S G gives an excellent shade of black and will be found particularly useful for slates, and also as a ground color for discharge in calico printing.

—÷—

Recipe No. 210

BROWN ON COTTON YARN

Katigen Cutch B F on 100 lbs. cotton yarn. Prepare the dye bath with

15 lbs. Katigen Cutch B F.
(The Bayer Co., 117 Hudson St., New York, N. Y.)
8 lbs. Sodium Sulphite, Conc.
8 lbs. Soda Ash.
80 lbs. Glauber's Salt, Crystals.

Enter at 180° F. and dye at a temperature just below the boil for one hour.

Katigen Cutch B F possesses very good fastness to washing, and good fastness to light.

—÷—

Recipe No. 211

GARNET ON COTTON YARN

Columbia Bordeaux B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Columbia Bordeaux B.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
30 lbs. Glauber's Salt, Crystals.
1 lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Columbia Bordeaux B for a direct cotton color possesses very good fastness to light.

—÷—

Recipe No. 212

YELLOW ON WORSTED YARN

Milling Yellow 3 G on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Milling Yellow 3 G.
(Cassella Color Co., 182 Front St., New York, N. Y.
4 lbs. Sulphuric Acid.
25 lbs. Glauber's Salt, Crystals.

Enter at 150° F. and dye at a boil for one hour.

Milling Yellow 3 G gives a bright shade of yellow possessing excellent fastness.

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Recipe No. 213

BROWN ON WORSTED YARN

Alizadine Brown M Paste on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Bichrome.
2½ lbs. Cream Tartar.

Boil in the above bath for one hour, after which raise and enter into a fresh bath containing

3 lbs. Alizadine Brown M Paste.
(Read Holliday & Sons, 160 Franklin St., New York.)

Raise to a boil and boil for 1 1/2 hours. Alizadine Brown M Paste possesses excellent fastness to light and heavy milling. It can also be used in combination with other chrome colors to give a variety of shades or as a self color.

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Recipe No. 214

BROWN ON WORSTED YARN

Chrome Fast Brown R on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Chrome Fast Brown R.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
20 lbs. Glauber's Salt, Crystals.
2 lbs. Sulphuric Acid.

Enter at 120° to 140° F., raise to a boil in about 3/4 of an hour and boil 1/2 hour longer. Then add

2 lbs. Sulphuric Acid, previously well diluted,

and boil 1/2 to 3/4 hours longer to exhaust the bath. Finally add

1½ lbs. Potassium Bichromate

and boil 3/4 of an hour.

Chrome Fast Brown R possesses good fastness to light and washing.

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Recipe No. 215

BROWN ON WORSTED YARN

Palatine Chromate Brown 6 G T Paste on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Palatine Chromate Brown G T Paste.
(Badische Co., 86 Federal St., Boston, Mass.)
20 lbs. Glauber's Salt, Crystals.
2 lbs. Potassium Bichromate.

Enter at ordinary temperature or not above 100° F. and raise gradually to the boil, exhausting by gradual additions of acetic acid amounting to about 5 lbs., or if necessary a little sulphuric acid may be added.

Palatine Chromate Brown G T Paste when applied by the chromate process as indicated above gives an excellent shade of brown of good fastness.

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Recipe No. 216

SCARLET ORANGE ON COTTON YARN

Diamine Brilliant Orange S S on 100 lbs. cotton yarn. Prepare the dye bath with

4 lbs. Diamine Brilliant Orange S S.
(Cassella Color Co., 182 Front St., New York, N. Y.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Diamine Brilliant Orange S S gives a very brilliant shade of scarlet orange possessing the characteristic properties of the direct cotton colors.

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Recipe No. 217

BROWN ON WORSTED YARN

Chrome Fast Brown V on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Chrome Fast Brown V
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
10 lbs. Glauber's Salt, Crystal.
5 lbs. Acetic Acid, 30%.

Enter at 140° to 160° F., raise to a boil in about 1/2 hour, boil for 1/2 hour, then add

1 lb. Sulphuric Acid, well diluted,

and boil for a further 1/2 hour.

Finally add

1½ lbs. Potassium Bichromate

and boil 1/2 hour longer.

Chrome Fast Brown V possesses excellent fastness to light and weather.

New Machinery and Processes

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to the textile manufacturers. It is not a list of patents but of improvements on the market, the idea being to present to our readers a systematic monthly record of new machinery, etc., of interest to textile mill men.

Whenever possible we endeavor to make a personal investigation of the new machinery and processes described in this department. In the absence of such personal investigation we must necessarily rely upon information obtained from those who control the machines and processes.

We invite machine builders and others to send us such information for this department.

Cloth Picking Machine. Hermas Machine Co., Keen and Warren Sts., Paterson, N. J., have placed on the market a new picking, brushing and cleaning machine for broad silks and ribbons.

Shearing or Picking Machine for Silk Goods. The Curtis & Marble Machine Co., 72 Cambridge St., Worcester, Mass., have recently placed on the market an improved machine for picking or shearing silk goods. A description appears in this issue.

Bobbin Changing Motion. Textilmaschinenfabrik Schwenningen, Schwenningen, Germany. An improved feeler for filling bobbins with an automatic bobbin changing motion for looms.

Warping Machine. James Mitchell, Nelson, Eng., has recently brought out a new type of warping frame. The reel instead of being filled with double flange bobbins is filled with about two thousand cheeses.

Weighting Loom Beams. Henry Livesey, Ltd., Blackburn, Eng. An improved device for regulating the friction on loom beams.

Card Stripping by Suction. Cook & Co., Manchester, Eng. A pneumatic machine for stripping cards by air suction. It is receiving special attention now in Lancashire owing to the scarcity of labor.

Fulling Mill. William Bates Son & Co., Sowerby Bridge, Eng. An improved fulling mill which is designed to prevent roping and mill wrinkles.

Clothing Burr Cylinders. Honegger & Co., Zurich, Switzerland. An improved appliance for winding saw-tooth wire on burr cylinders of carding machines.

Singeing Machine. Wegmann & Co., Baden, Switzerland. An improved machine for singeing yarn, thread, etc. It is equipped with a suction device for removing gases and dust.

Finishing Machine for Pile Fabrics. Thewlis & Co., Huddersfield, Eng. An improved whirlpool machine for finishing pile fabrics to imitate fur.

Drawing Off Rollers. Paul Helmbold, Colmar, Alsace, Germany. An improved device for driving the drawing-off rollers of cotton combers.

Hank Polishing Machine. Joseph Stubbs, Ltd., Manchester, Eng. An improved machine for polishing yarn in skeins. It is claimed that new features have resulted in doubling the production.

Curved Selvage. Mann & Schaefer, Barmen, Germany, have recently perfected a method of weaving narrow fabrics with curved or undulating selvages.

Treating Cotton Goods. Fr. Gebauer, Berlin, Germany. A machine for steaming cotton goods in the open width by a continuous process.

Leno Weaving. W. B. White, Colne, England. An improved method of weaving leno fabrics.

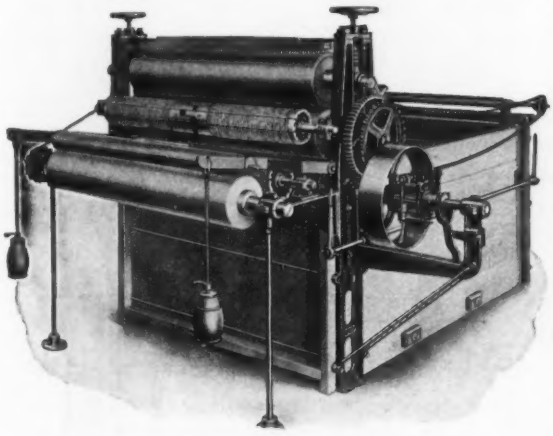
A Loom Stop Motion. A. Sykes, Huddersfield, England. An improved warp stop motion having a vibrating brush which ensures the operation of the motion when a thread breaks.

Filling-Changing Attachment. The Textilmaschinenfabrik Schwenningen, Schwenningen, Germany. An automatic cop changing attachment for looms.

Thread Cleaner. Rudolph Voigt, Chemnitz, Germany. An attachment for removing bunches and other defects from yarn.

THE DUNN CRABBING AND LUSTERING MACHINE

The illustrations show an improved crabbing and lustering machine for worsted goods. It is built by the Rodney Hunt Machine Co., Orange, Mass., and has been designed both to increase production and improve the finish of the worsted fabrics. It is especially efficient in removing cockles, loom



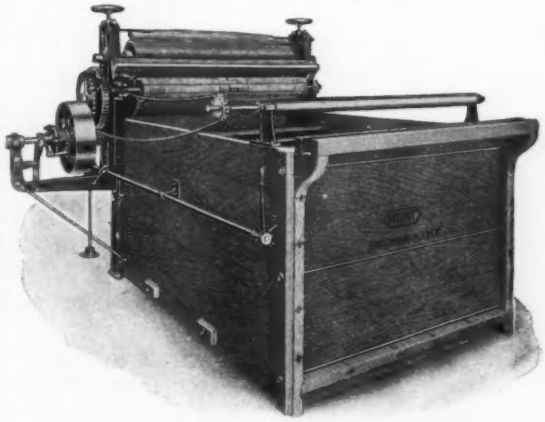
THE DUNN CRABBING AND LUSTERING MACHINE

wrinkles and creases that have originated in previous processes of finishing. Another important advantage is that the goods are delivered with the surplus moisture removed, making it unnecessary to run them in the extractor. The uniform treatment given goods by this machine does away with cloudy effects due to uneven steaming, sets the fabric and improves the luster, pliability and handle of the goods. The goods are subjected at one continuous operation to the heat, moisture and pressure necessary to impart the desired finish. While so heated and moistened the cloth is stretched to full width and rolled firmly and smoothly on the perforated cylinder.

A cut of cloth will go through the machine in three to four minutes, including the time for putting the pieces in and taking the rolls to the setting rack. Wrinkles and creases are prevented by rolling the pieces immediately instead of carrying them to another machine for extracting the moisture and then to another for rolling. The pieces are fed into the tub over the doffer roll which revolves a little faster than the squeeze rolls so that the goods are loose in the tub. An attendant at the feed end of the machine keeps one side of the cloth drawn up to a mark as it is raised from the pile on the truck, and thus keeps the pieces straight.

After passing over the several rolls in the tub, the piece is drawn out and over the first stretcher roll which draws it out to width. This machine is not intended to increase the length of the goods and will not do so unless especially arranged. From the first stretcher roll the piece passes between the two large rubber-covered squeeze rolls which take out the excess water. The moist cloth then passes over two or more stretcher rolls which open it to full width. All cockles and wrinkles are thus taken out. While hot and steaming and at full width the piece passes over the receiver or supporting roll from which it is rolled tightly and smoothly on the beam.

The spindle or beam is removed when the required number of pieces have been rolled on it and is taken to the setting rack where the cloth is allowed to set. In this condition



ANOTHER VIEW OF THE CRABBING AND LUSTERING MACHINE

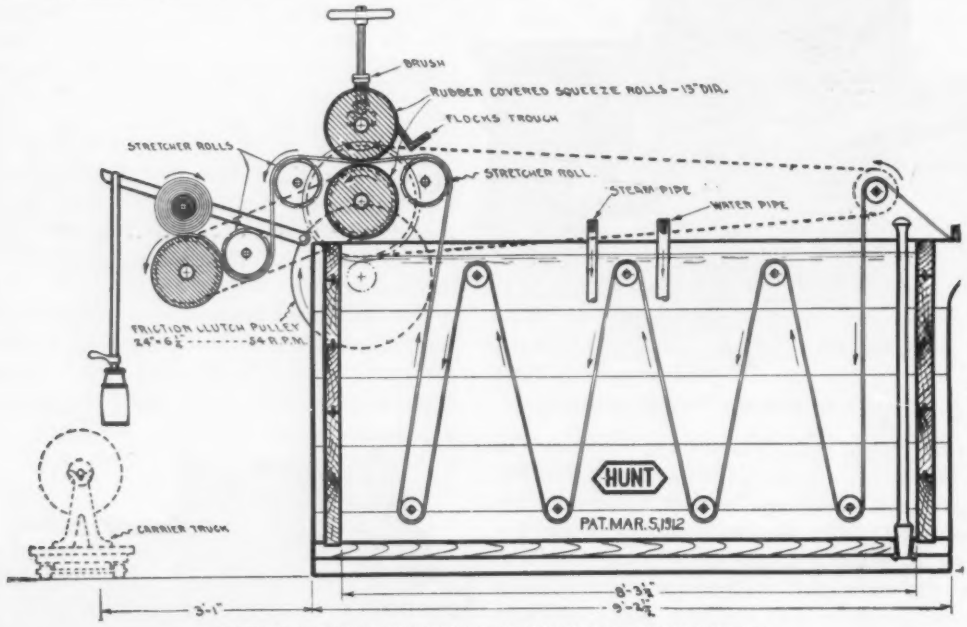
a luster is obtained which is very desirable for certain kinds of finish. Pendulum weights hanging from levers keep the goods pressed tightly on the beam.

While the cloth is passing through the tub and over the first stretch roll bunches of loose fibers are sometimes collected. To

prevent these loose fibers coming back on the cloth, a brush extends the length of the upper squeeze roll so that the litter will adhere to the brush, become rolled into small balls, and drop into a receptacle or trough from which it is removed at intervals.

The machine may be filled with hot water before starting, or cold water may be put into the tank and then heated by steam, this process taking about one-half an hour. The tank is usually filled twice a day, in the morning and again at noon. For colored goods the temperature of the water varies from 150° to 160° F., and for white goods it may be 200°. Some goods are benefited by being run through the machine twice or three times so that there will be no change in width whatever the subsequent operations of finishing may be. It is usual to allow the goods to stand over night or from ten to twelve hours between the operations of running through. This machine will carry from 100 to 120 fifty-yard pieces of goods per day.

Attachments for cooling or steaming are furnished when required. This crabbing machine is made in four sizes for goods 38 inches, 54 inches, 71 inches and 78 inches wide. Full particulars and specifications may be had by writing the builders.

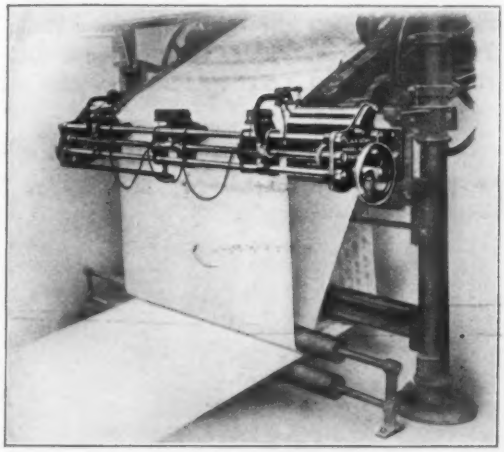


A SECTIONAL VIEW OF THE DUNN CRABBING AND LUSTERING MACHINE

AN AUTOMATIC CLOTH FEED FOR TENTERING MACHINES

A great deal of attention is being given to the elimination of labor on tentering and other machines to which cloth is fed by hand. The accompanying illustration shows an automatic electric cloth feeding apparatus for which L. H. A. Schwartz & Co., 40 Central St., Boston, Mass., hold the American patents and which they are installing in many representative mills. The action of the feed is instantaneous and is controlled by two feelers touching the selvages on either side of the cloth. These make or break the electric circuit which actuates four magnets. Each magnet, when in action, draws the end of a lever, which is supported by a fulcrum and carries a rubber roller that presses against a stationary brass roller with the cloth between. The rollers are set obliquely and when in contact cause the cloth to move to one side. The center pairs of rollers, used for all except heavy fabrics or when the cloth must feed without a crease, form a fold in the middle of the cloth, which allows for a considerable variation in width and also relieves the side tension that otherwise would distort the pattern of the goods.

The two feelers are adjustable to extreme variations in the width of the cloth by simply turning a hand wheel. The electric action is instantaneous and positive and the cloth is guided so accurately that it can be fed onto pin clips. In most cases, the feeder can be bolted to two portable floor posts and connected to a lamp socket without disturbing the machine to which it is to be applied. It is furnished on approval and is assembled before being shipped so that there is no difficulty in making a trial. The feeder works equally well on vibrating or straight tenters. As no extra floor space is needed, the passage in front of the tenter is not disturbed.



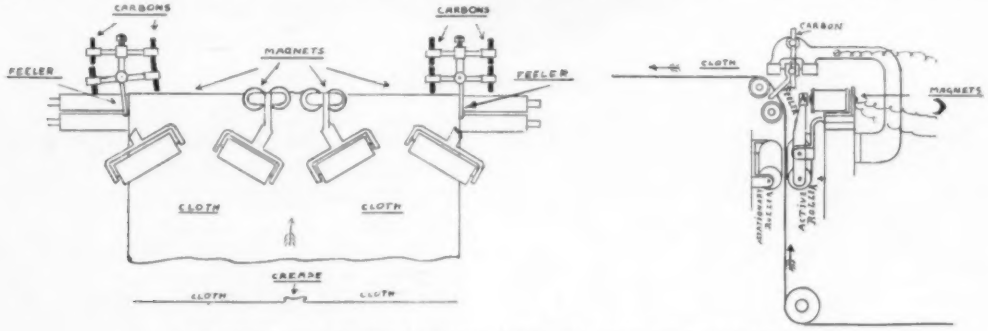
THE SCHWARTZ AUTOMATIC CLOTH FEEDING APPARATUS

L. H. A. Schwartz & Co. build this apparatus in this country and can supply it quickly. All parts are standardized and interchangeable.

THE "PURO" DRINKING FOUNTAIN

The illustration shows one form of the combination drinking fountain and faucet manufactured by the Puro Sanitary Drinking Fountain Co., Haydenville, Mass. The old style faucet with the unsanitary cup is rapidly disappearing, the use of them having been prohibited by law in a number of States. The "Puro" fountain replaces them and in addition allows of a clean and easy way of drinking from a bubble. The "Puro" is a heavy red brass casting heavily nickle plated. It can be installed by any ordinary

THE "PURO" DRINKING FOUNTAIN

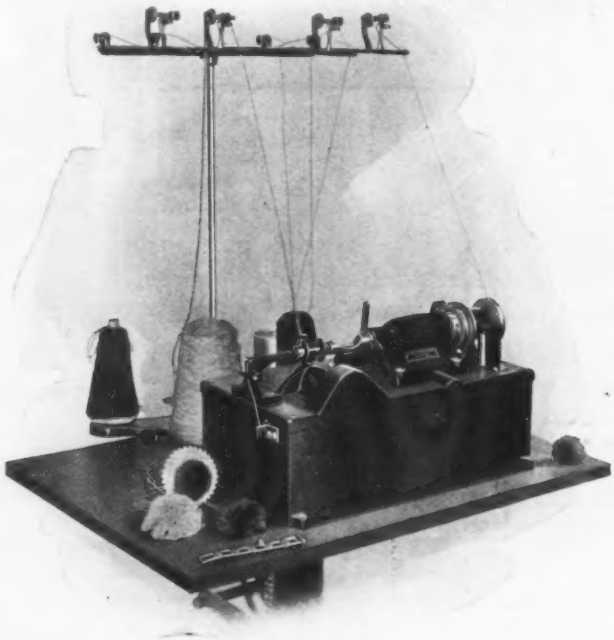


A SECTIONAL VIEW OF THE SCHWARTZ AUTOMATIC CLOTH FEEDING APPARATUS

workman and does not involve any extra cost for piping or valves. The old faucet is removed and the "Puro" screwed on to the same feed when it is ready for use. Pressing the bubble handle gives a soft, sparkling bubble of water, making it possible to drink naturally without splashing the water. The bubble rises about 1 1/2 inches, the height being regulated as desired. Its appearance is like a miniature geyser; the control is concealed and the bubble cannot rise higher than the point at which it is adjusted. When it is desired to draw the water for other purposes, pressing the faucet handle gives the full pressure of the water system. The manufacturers claim that the "Puro" fountain will save 35 per cent. of the water wasted by ordinary means, and 60 per cent. of the time consumed by employes in drinking, in addition to preventing the spread of disease. The "Puro" fountain is used in many of the leading manufacturing plants of the country, a list of which can be obtained on application to the Puro Sanitary Drinking Fountain Co.

THE GROSSER POMPON MACHINE

The illustration shows a new machine for making pompons for toques, caps, hoods, scarfs, slippers and other ornamental purposes, which are so much called for in the present styles. This is a compact little machine, no bigger than a sewing machine, and can be placed on any sewing machine table. It only requires 1/8 H. P. to drive it and runs at speed of 1,000 to 1,200 revolutions per minute. No shearing or trimming is required and there is no waste of material, and there is no irregularity in the size of the pompons.

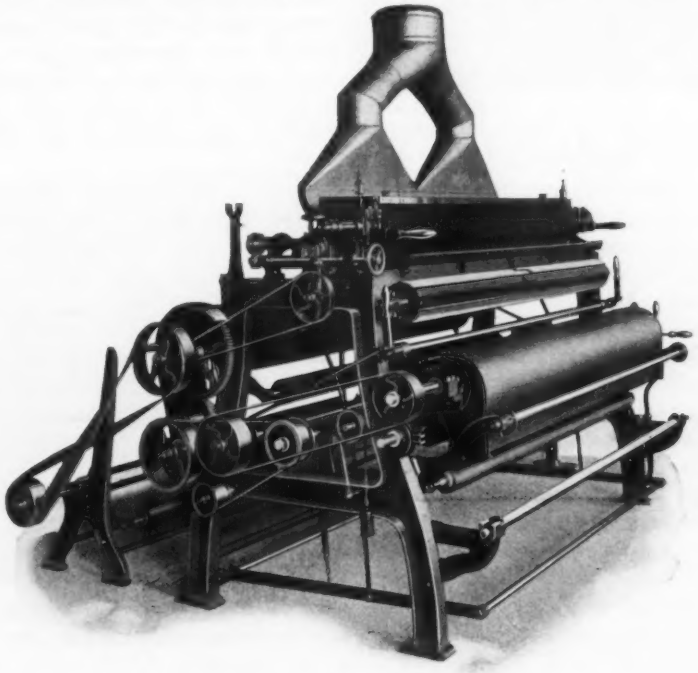


GROSSER POMPON MACHINE

This machine was first shown at the exhibition in Philadelphia last month. It is manufactured and sold by the Grosser Knitting Machine Co., 260 West Broadway, New York City, who invite correspondence with manufacturers relative to the important savings and advantages through its use. It is sold at a reasonable price and prompt deliveries can be made.

A MACHINE FOR SHEARING OR PICKING SILK GOODS

The illustration shows an improved machine built by the Curtis & Marble Machine Co., Worcester, Mass., used for clearing threads, knots, bunches, etc., from the surface of silk goods after coming from the loom, thus dispensing with hand work. Machines for this purpose have been used in different countries in Europe and to a great extent have superseded hand work on many classes of silk fabrics. The Curtis & Marble Machine Co. have made a careful study of this process and their machine has been designed on the most improved principles. The builders are confident that it is unexcelled both for workmanship and the quantity and quality of the work turned out.



MACHINE FOR SHEARING OR PICKING SILK GOODS

The cutting parts, which are a vital element of the machines, receive most careful attention, and are unsurpassed in their quality, temper and finish. Any needed repairs to the cutters and other parts of our machines are quickly available, and the difficulties and delays incident to obtaining supplies from abroad for imported shears are done away with.

The picking or shearing machines will do good work on both skein dyed and piece dyed goods. They occupy far less space than would be required for hand pickers for doing this same work. The machine has a brush for cleaning the face and raising the threads and fibers from the surface of the goods, also a brush for removing lint or dirt from the back of the goods. On the front of the machine, above the brush, is a revolving spreader roll for holding the goods out in width, and removing wrinkles so that the goods may be perfectly flat and smooth when they reach the cutting parts. Serious damage to the goods would result if they passed over the cloth rest in a wrinkled or creased condition. The spiral blades in the revolver and also the stationary or ledger blade have hardened steel cutting edges similar to those used for shearing other fabrics, but the blades are ground and adjusted with

special reference to their use on silk goods. The cloth rest over which the goods pass directly underneath the cutting parts, has two edges with a hollow space between and the cutting is done about midway between the two edges. The front edge of the cloth rest is made adjustable for convenience in bringing the line of the cloth and the cutting point of the blades in their proper relations to each other.

A close-fitting exhaust hood is arranged around the cutting parts, and connection is made to an exhaust fan to suck off the threads and particles removed from the goods and also to have a strong current of air enter between the revolver and ledger blade directly at the cutting point, so that the threads, knots and other protruding substances may be lifted by the air current and drawn directly into the bite of the blades. This principle of suction has been used by the Curtis & Marble Machine Co. for several years in connection with shearing embroidery and other goods, as well as silk goods. Work which would otherwise be impossible on a shearing machine is made possible by its use. Forked brackets are provided on the front of the machine for folding the goods as they are brought to it, and there is a rolling-up device at the rear to rewind the goods on shells or rolls after being sheared. The illustration shows the type A rolling head for rolling the goods up by surface friction. A winding arrangement driven with slip belt is used if preferred.

Provision is made for quickly raising the cutting parts when seams pass over the cloth rest to avoid cutting the goods where they are sewed together at the ends. After a seam has passed, the blades are easily lowered again to the former position. A stop-and-start motion, with handles at each side of the machine, is provided for the draft roll that draws the goods through the machine, so that this roll may be instantly stopped and started while the other parts of the machine are in motion. This allows the revolver to obtain full speed before commencing to shear, and also enables the operator to stop the cloth instantly at any desired point. This very convenient feature is not usually found in imported shears.

The machines are built in different widths as required; the most common widths being for 40, 45 or 54 inch goods, though machines either narrower or wider than this are easily furnished. The machine is built with a single set of cutting parts, as shown above, or with two or more sets of cutters, all of them arranged for the same width of the goods, or with one or more sets for each side of the goods as required. The Curtis & Marble Machine Co. are equipped to attend to repairs to the cutting parts of foreign shears or furnish extra cutting parts. They have a department devoted to this work and manned by a corps of workmen who are skilled in grinding and adjusting all kinds of shear blades.

A HOSIERY MILL'S EXPERIENCE WITH BALL BEARINGS

By Robert C. Byler of the S. K. F. Ball Bearing Co., New York City

The problem of applying efficiency to power plants and decreasing power consumption is one that is occupying the attention of alert manufacturers in every line of business.

Every device that will increase efficiency and reduce cost is to be considered. The initial cost of apparatus, however, has frequently caused its rejection, because manufacturers can get along without it. Often they do, but it is after a fashion, and they are not receiving full value on their investment.

At the plant of Tonner & Moyer, Lansdale, Pa., more power was needed. Just how to obtain it without increasing the power plant equipment was a vexing problem. But the way that this mill met the difficulty without adding more power units, and how in addition made capital out of the embarrassing situation, is of interest to other manufacturers who find themselves in the same predicament.

The electric power for operating motors is obtained from a central plant. Every kilowatt hour is metered and, therefore, any wastage is dead loss.

In laying out the plans for the equipment of this mill, every precaution was observed by the engineers, and the Scott & Williams full automatic knitters were installed accord-

ing to those plans. Groups, driven by a line of shafting run under the machines, were considered the most convenient arrangement. Six to eight machines were allowed to one motor horse power and the motor sizes were chosen on this basis.

Plain babbitt bearings of the usual type were installed, lined up, and the machines properly set. Motors, rheostats and other fixtures were properly wired and tested, the current turned on, but the machines would not start. Evidently the load was too great and to run six to eight machines to a horse power with the plain babbitt bearings was not feasible.

Just what they should do was not at once

S. K. F. HANGERS SUPPORT THE MACHINE DRIVING SHAFT. 13 LOOPERS ON ONE 1-HORSEPOWER MOTOR

apparent. Belts were adjusted—machines carefully oiled and after delay the machines were made to run, but not up to the standard of efficiency. Too much power was required to start up, especially in the morning when the hangers were cold and stiff.

To say that this profit-eating annoyance was unsatisfactory would be expressing it mildly. Evidently something must be done. The trouble was finally attributed to the plain babbitt hanger bearings, which consumed the large part of the power.

After the management had been convinced that the old style equipment of babbit bearings were at fault, the old equipment was scrapped. New up-to-date transmission were installed. The type of hanger selected was the S. K. F. ball bearing hanger. This selection was made for two reasons: first, the

60 KNITTERS RUN BY 5 MOTOR HORSEPOWER. THIS IS EQUIVALENT TO 12 KNITTERS PER HORSEPOWER

ball bearing type of hanger would mean a substantial power saving, and second, the S. K. F. hanger is self-aligning, which permits the shaft to deflect without binding the bearing.

When the new transmission was installed, there was a power saving. This was expected and showed up in the monthly bill. Just how much this amounted to would be difficult to state, because new equipment has since been added and there is a greater production from the plant. It should be noted that more machines were added for the same motor equipment.

An added feature, a feature which is essential to any textile manufacturers, was the

54 KNITTERS RUN BY 5-HORSEPOWER MOTOR AND 19 RIBBERS ON 2 HORSEPOWER. THE DRIVE IS ON S. K. F. BALL BEARINGS

fact that the lubrication problem was solved. These hangers are lubricated with a little oil once in six months. There is no leakage or

dripping of oil onto the floor and machines and there is no possibility of oil-stained goods.

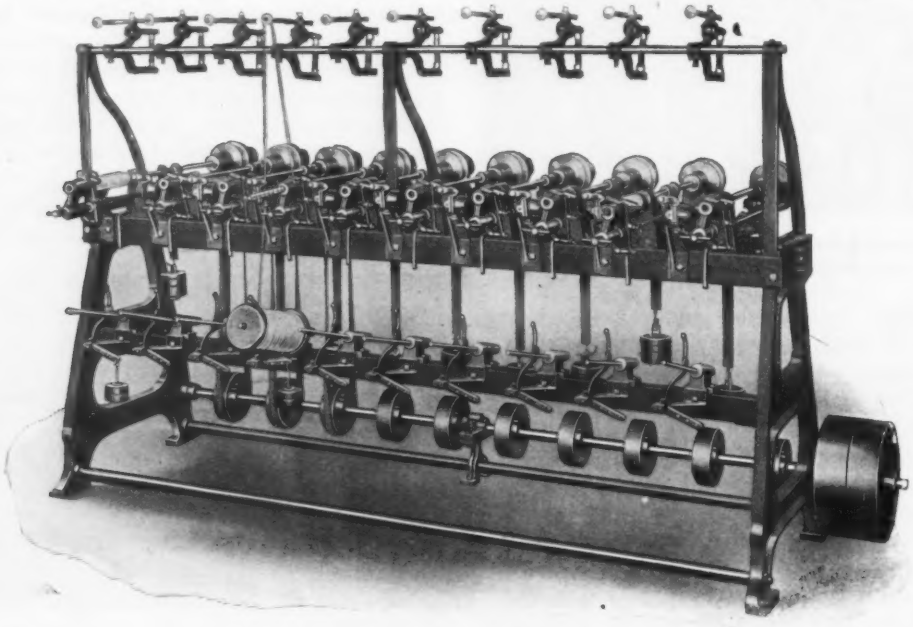
This doing away with the lubrication problem has another advantage in that the fire risk is lessened. There is no oil-soaked lint in the mill and there is no danger of fire from hot bearings. The entire mill has a neat, orderly appearance which cannot but impress a visitor.

As the mill superintendent expressed it, these ball bearing hangers have permitted him to forget all about the power problem.

The machines are run up to speed without difficulty and normal running speed is maintained without fear of hot or worn bearings. "Doctoring up" bearings that have gone wrong is no longer part of the mill schedule.

NEW BOBBIN WINDER

The illustration shows a new bobbin winder which is being placed on the market by F. A. Lazenby & Co., 1218 Warner St., Baltimore, Md. In this winder the yarn draws from the spool up through a front tension, then over the top tension, down into the trumpet or former passing through a feed guide on which there is a traverse motion. This lays the yarn regularly and in a cross wind, causing it to throw from rather than to hug around the wooden barrel and avoiding any tendency to draw selvages. As the bobbin fills up it is retarded by a back tension and this can be regulated to obtain any degree of hardness of the bobbin. The bobbins produced are all of an exact size and it is claimed contain more yarn than has been hitherto possible to put on to the same size filling bobbin. Further information may be obtained from the builders.



THE LAZENBY BOBBIN WINDER

MAKING PAINT REDUCE LIGHTING BILLS

Light has always been recognized as an essential to manufacturing efficiency in the textile industry and when that same light can be made to cause a reduction in bills for electricity, or gas, as well as improve the sanitary condition of the property, it may be said that the maximum efficiency has been reached.

The United States Gutta Percha Paint Co., Providence, R. I., originators of Rice's

Gloss Mill White, has done much educational work in this line and has, in consequence, secured a great deal of business from textile mills, being the first to push the sale of Mill White Paint in this field.

The light-reflecting qualities of Gloss Mill White Paints in effect makes the day longer, reducing the use of artificial light as well as making otherwise dark corners more serviceable and tending to cause improvement in the quality of the output of the mill through lessening the liability of "seconds" due to darkness or impaired eyesight, resulting from poor light.

The benefits of Mill White Oil Paint for this purpose in contrast with white-wash or cold water paints include the absence of flaking and scaling with the resulting damage to machinery and product; the paint being more elastic and less likely to crumble in addition to having a glossy surface that multiplies the light values.

The washable quality of the paint is an additional feature and its smoothness is such as to lessen the adherence of dust, lint, etc.

The use of Mill White Oil Paint on the walls and ceilings of textile mills has also resulted in another benefit to the manufacturer as it has made the employes feel more contented and satisfied, resulting in a feeling that the employer has a desire to improve the sanitary conditions for the benefit of the employe.

In spite of the present business conditions the United States Gutta Percha Paint Co. reports that it is selling more Rice's Mill White than ever before, so much so that at the present time an addition to their plant is being erected.

CULTIVATING CHINESE INDIGO

Consul General George E. Anderson, Hongkong, Mar. 1

The shortage of the supply of synthetic indigo in the markets of the world as a result of the war in Europe and the consequent high prices or imported indigo in Chinese markets has led to a revival of the native production of indigo in various parts of the country. Considerable activity in this line is reported in the districts immediately tributary to Hongkong and Canton, notably in Fatshan, Chao-yang, and neighboring districts

Chinese importers of indigo also report that there is a renewal of the cultivation of the plant in the Yangtze Valley, particularly in the canal country about Hangchow. It is impossible to estimate the increase in the production of the dye, but it is well to recognize the fact that indigo production is one of China's oldest industries. The Chinese developed their own process of making the dye and have used their native product for many centuries before foreign dyes were known. The production of native indigo has continued all the time and in many districts of the country foreign dyes are still comparatively rare.

During the last 10 years, however, agents of German dye manufacturers have been among the most active of all foreign representatives and they have extended their trade in all lines of dyes, including synthetic indigo, far into the interior districts, where other foreign goods are all but unknown. The synthetic indigo can be manufactured and delivered well into the interior of China at lower cost than the native product. However, when the price of foreign dye rises to such points as have been reached during the present war the native product becomes the cheaper. The Chinese people, with that adaptability which characterizes practically all lines of the foreign import trade in the country, and especially such lines as cotton piece goods and similar staple articles, then turn to their native product, which they had been using for hundreds of years before foreigners were known.

The imports of aniline dyes into China in 1913 were valued at $3,943,329, those of artificial indigo at $7,172,206, and of vegetable indigo at $41,535. Belgium and Germany furnish practically the whole of the aniline colors, about 15 per cent. of the trade being handled through Hongkong. Belgium and Germany also furnish practically the whole of the artificial indigo, Germany furnishing about twice as much as Belgium. A considerable portion of this trade also is handled through Hongkong. Hankow and Newchwang are the chief centers of import, though nearly all of the ports in south China import considerable quantities for their dyeing industries as well as for general distribution.

With this immense import trade in indigo it is unlikely, of course, that there will be any of the native product available for export, for the time being at least. Local production will only have the effect of lessening the demand upon foreign supplies of the dye. A continuation of present high prices for dyes, and especially of indigo, however, will lead to a great development of the old-time industry in China, and will materially affect all markets in such materials.

Embroidery was introduced into St. Gallen in the middle of the 18th century as a hand industry. At first Indian muslins were imported to be embroidered by the women of St. Gallen, but subsequently Swiss muslins took the place of Indian.—The Cotton Industry in Switzerland.

Personals

Thomas E. Heatley has resigned his position as superintendent of the Seaconnet Mill, Fall River, Mass., to accept a similar position with the Maverick Mill, East Boston, Mass.

John Clark has accepted a position as overseer of dyeing at the Sonnhill Worsted Co., Elmville, Conn. He was formerly employed at Plymouth, Mass.

George H. Asquith, Jr., has accepted a position as overseer of carding at the Crown Mill, Marcellus, N. Y. He was formerly employed at the Hanover Woolen Manufacturing Co., Hanover, Ill.

George Nichols has been appointed treasurer of the Chicopee Manufacturing Co., Chicopee Falls, Mass., to succeed Hartley L. Lord. Mr. Nichols will have his office in New York instead of Boston and was a member of the Board of Directors of this company.

D. S. Knight, overseer of weaving at the Waucantuck Mill, Uxbridge, Mass., has resigned his position with that cimpany. He is succeeded by Fred Crook.

William Lacey has been appointed designer at the Waucantuck Mill, Uxbridge, Mass. He comes from Pascoag, R I.

Thomas Bullen has been appointed overseer of weaving at the No. 8 Wamsutta Mill, New Bedford, Mass.

Andrew McClellan has been appointed overseer of weaving at the Lippitt Mill, B. B. & R. Knight, Phenix, R. I.

Joel M. Bense has accepted a position as overseer of spinning, spooling, twisting and winding at the Woonsocket Worsted Mill, Woonsocket, R. I.

John E. Millett has accepted a position as overseer of weaving at the Little Woolen Company, North Montpelier, Vt.

A. Little, formerly overseer of dyeing at the Rock River Woolen Mill, Janesville, Wis., has accepted a similar position with the Janesville Dyeing & Bleaching Works, Janesville, Wis., a new plant which has recently started at this place with Arthur E. Jones, formerly of the Rock River Woolen Mill, as superintendent.

E. D. Woodward has accepted a position as designer at the Burlington Mill, American Woolen Company, Winooski Vt. He was formerly employed at the Hanover Woolen Manufacturing Company, Hanover, Ill.

George I. Shaw has accepted a position as overseer of dyeing at the Patrick-Duluth Woolen Mill, Duluth, Minn. He was formerly employed at the North Star Woolen Mills, Minneapolis, Minn.

Edwin Lawton, overseer of dyeing for Fairbanks & Dorr, Guild, N. H., has resigned his position with that company.

Thomas Mackinnon has been promoted from second hand to overseer of dyeing for Fairbanks & Dorr, Guild, N. H.

Harry Compton, superintendent of the Champion Silk Company, Astoria, N. Y., for several years, has accepted a position at the Summit Silk Company, Summit, N. J.

R. A. Briden has accepted a position as assistant dyer, mercerizer and bleacher for the Nyanza Mill, Woonsocket, R. I. He comes from Easthampton, Mass.

Julius Berker, overseer of dyeing at the Esmond Mill, Esmond, R. I., has resigned his position with that company.

George Warfield, master mechanic at the Palmer Mill, Three Rivers, Mass., has resigned his position to accept a similar one in a large mill at Pawtucket, R. I.

Fred H. Clark, superintendent of the Lippitt Mill, Phenix, R. I., was unanimously elected president of the Grosvenor-Beckman Club at a well attended meeting of that organization held in Knights of Pythias' Hall on May 20.

Benjamin Halliwell, treasurer of the Lymansville Company, Lymansville, R. I., has returned from a trip of several weeks to California, where he was accompanied by his family.

J. P. Thompson has accepted a position as overseer of carding at the Bibb Manufacturing Company's Mill No. 1, Macon, Ga., to succeed W. P. Sanders.

J. D. Lokey has accepted a position as overseer of carding at the Ware Shoals Manufacturing Company, Ware Shoals, S. C.

W. L. Heffner has accepted a position as assistant superintendent at the Union Cotton Mills, Maiden, N. C.

J. D. Haney has accepted a position as master mechanic at the Chadwick Mill, Charlotte, N. C.

J. L. Bobo has accepted a position as overseer of weaving at the Anderson Mill, Anderson, S. C. He was formerly employed at the Mills Manufacturing Company, Greenville, S. C.

L. T. Busby has accepted a position as overseer of weaving at the Mills Manufacturing Company, Greenville, S. C.

W. J. Bridgeman has accepted a position as overseer of weaving at the Hartwell Mills, Hartwell, Ga. He was formerly employed at the Arcadia Mills, Arcadia, S. C.

William Hinchliffe, superintendent of the Waucantuck Mill, Uxbridge, Mass., has resigned his

position with that company. His successor is John T. Brady, who has been designer at the mill. Mr. Brady is the son of Edward J. Brady, president of the company.

Thomas J. Feeney has accepted a position as overseer of carding and combing for the Bay State Corporation, LeRoy, N. Y.

Clayton D. Mosher, superintendent of the Merrill Silk Glove Mill, Corning, N. Y., has resigned his position after nine years of service, to accept a similar position with the Niagara Silk Co., Ltd., Brantford, Ont., Canada. He is succeeded at Corning by Archie Smith.

Herbert Walmsley, superintendent of the Wamsutta Mill, New Bedford, Mass., has resigned his position with that company.

Frank S. Neild, superintendent of the Soule Mill, New Bedford, Mass., has resigned his position with that company.

William H. Patnode has accepted a position as overseer of weaving at the Anco Mills, Wilkinsonville, Mass. He was formerly employed at the Stark Mill, Manchester, N. H.

John C. Parkinson has accepted a position in charge of the worsted yarn department at the Lippitt Woolen Co., Woonsocket, R. I. He was formerly employed at the Woonsocket Worsted Mill, Woonsocket, R. I.

Theodore Potvin, for the past eighteen months in charge of the weaving department at the Lippitt Mill, B. B. & R. Knight Co., Phenix, R. I., has resigned his position with that company. He is succeeded by Andrew McClellan.

W. A. Nichols, who has been secretary and treasurer of the Lafayette Cotton Mill, Lafayette, Ga., since its organization, has sold his stock in the mill and tendered his resignation as secretary and treasurer.

G. H. Fairbanks, superintendent of the Wallace Mills, Jonesville, S. C., for the past ten years, has resigned his position with that company. He is succeeded by J. E. Meyer, who is promoted from overseer of weaving.

J. W. Ahmuty, superintendent of the Lockhart Mills, Lockhart, S. C., has severed his connection with that company. He is to accept a position with the Lynchburg Cotton Mills, Lynchburg, Va. F. D. Lockman, overseer of weaving at the Lockhart Mills, has been promoted to the position of superintendent.

A. Homer Skinner has been elected treasurer, clerk and a director of the Corr Manufacturing Co., Taunton, Mass. Arthur E. Robbins, vice-president, has resigned.

S. R. Haines, for a number of years manager of the Robert Dobson Co., Pittsfield, Me., and who later was appointed agent of the Pioneer Mill, after the American Woolen Co. took over this plant, has been appointed assistant manager of the woolen mills connected with the American Woolen Co. and will take up his new duties about June 1.

George E. Mayo, who was recently appointed agent of the Foxcroft Mill, American Woolen Co., Foxcroft, Me., has resigned to become agent of the Pioneer Mill, American Woolen Co., Pittsfield, Me.

W. E. Cahill has been appointed superintendent of the Clayville Knitting Co., Clayville, N. Y. He formerly held a similar position with the Greenwich Knitting Co., Greenwich, N. Y.

George Annis has been appointed superintendent of the Naumkeag Steam Cotton Co., Salem, Mass. He was formerly employed as an overseer at the Lyman Mill, Holyoke, Mass., and is succeeded at the Lyman Mill by James Garland, who has been learning the business under Mr. Annis.

Charles A. St. Onge has been appointed agent of the Foxcroft Mill, American Woolen Co., Foxcroft, Me. Mr. St. Onge was superintendent of this mill for a short time but recently came from the Brown Mill, American Woolen Co., Dover, Me.

Frederick H. McDevitt, superintendent of the Maverick Mill, East Boston, Mass., has accepted the position of agent of the Soule Mill, New Bedford, Mass. He takes up his new duties about June 1.

Theodore G. Beckert, superintendent of the Malone Woolen Mill, J. O. Ballard & Co., Malone, N. Y., has resigned his position with that company.

Charles Hayes, Jr., manager and buyer for the National Knitting Co., Milwaukee, Wis., has resigned his position with that company.

Thomas Bradbury, overseer of carding at the Wamsutta Mill, New Bedford, Mass., has been promoted to the position of overseer of the yarn department. Henry Holland has succeeded Mr. Bradbury as overseer of carding.

William Andrews, who has been overseer of weaving at the Berkshire Mill No. 3, Adams, Mass., has been appointed overseer of weaving at the Greylock Mill, North Adams, Mass., to succeed Daniel A. Gahan.

F. McCarthy has been appointed overseer of dressing for the Geo. E. Kunhardt Mill, Lawrence, Mass., to succeed Daniel Darling.

Thomas Stone, overseer of weaving at the Wamsutta Mill, New Bedford, Mass., has been appointed superintendent to succeed H. Walmsley.

Daniel A. Gahan, overseer of weaving at the Greylock Mill, North Adams, Mass., and William Guest, second hand in the weaving department, have resigned their positions with this company. On resigning the employes in the weaving department presented Mr. Gahan with a ring and Mr. Guest with a watch.

James J. Durkin, who has held the position of shipper for the Shaw Stocking Co., Lowell, Mass., for a number of years, has tendered his resignation with that company. He was presented with a handsome gold watch by the employes with whom he had been associated as a token of the esteem in which he was held.

B. F. McClure has accepted the position of night superintendent of the Bladenboro Cotton Mills, Bladenboro, N. C.

E. B. Arrowwood has accepted a position as overseer of carding and spinning at the Huss Manufacturing Co., Bessemer City, N. C.

J. E. Meyer has been promoted from overseer of weaving to superintendent of the Wallace Mills, Jonesville, S. C.

N. W. Garner has accepted a position as overseer of weaving at the Wallace Mills, Jonesville, S. C.

George Harrison has been appointed manager of the Ottaray Mills, Union, S. C., and the Wallace Mills, Jonesville, S. C.

J. Frank Thompson has been promoted from boss spinner to superintendent of the Danville Knitting Mills' yarn plant at Bon Air, Ala., to succeed J. F. Kersey, deceased.

John H. Carey has been appointed chemist for the Proximity Manufacturing Co., Greensboro, N. C. This is a new position created recently at this mill. He is a son of Daniel J. Carey, who is overseer of dyeing at the Revolution Cotton Mill, Greensboro.

J. G. McDonald, night superintendent at the Bladenboro Cotton Mills, Inc., Bladenboro, N. C., has resigned to accept a position with the Marlboro Cotton Mills, McColl, S. C.

D. E. Madden has accepted a position as overseer of the cloth room at the Ware Shoals Manufacturing Co., Ware Shoals, S. C.

Clarence J. Bodfish, general agent of the worsted division of the American Woolen Company, with office at Boston, Mass., has resigned his position with that company.

Gustave Nordenstierna has accepted a position as overseer of dyeing at the Dunn Worsted Mills, Woonsocket, R. I. He was formerly employed at the Lawrence Dye Works, Lawrence, Mass., but later with the Merrimack Valley Mill, Methuen, Mass.

William P. King, for seventeen years superintendent of the New York Cotton Exchange, has resigned and his resignation has been accepted with reluctance. No successor has yet been named. He gives up his duties at the Cotton Exchange on June 1. He joined the institution as an active member in June, 1872, and became superintendent in December, 1898. Mr. King has not been in the best of health and is going West for some months. After his return he may take up some business, although he has not yet decided what it will be.

At the annual meeting of the New York State Knit Goods Manufacturers' Association held in the Utica Hotel, Utica, N. Y., May 12, the following officers were elected for the coming year: President, John E. McLaughlin, of the Mohawk Valley Cap Factory, Utica; secretary, A. S. Brinckerhoff; treasurer, Beecher M. Crouse.

The New England Textile Club held its annual meeting, field day and outing May 15 with a large attendance. The business meeting was held at the Derryfield Club. The following officers were elected: William A. Mitchell, Lowell, Mass., president; Louis Dexter and Capt. Charles A. Manning, both of Manchester, N. H., vice-presidents; Stephen N. Bourne, Manchester, Clerk; William E. Hall, Lowell, secretary and treasurer; Col. W. Parker Straw, Manchester; Charles Fish, Boston and Walter Parker, Lawrence, the executive committee.

Ovide Ricard Tessier has been appointed manager of the yarn department at the River Spinning Co., Woonsocket, R. I. He will retain his interest and position as treasurer and manager of the Woonsocket Spinning Co., which position he has held for a number of years.

W. S. C. Wiley, superintendent of the Campbell Knitting Mill, Elmira, N. Y., has resigned his position with that company.

Warren J. Arnold has been appointed overseer of weaving at the Lymansville Co., Providence, R. I. He was formerly employed at the Fernrock Mill, Philadelphia, Pa.

Frank Arnold has resigned his position as overseer of the carding department at the Blackstone Stocking Co., Central Falls, R. I. He is succeeded by James Finnegan.

R. B. Frasier, for the past twenty-eight years superintendent of the weaving department at the Bates Manufacturing Co., Lewiston, Me., has tendered his resignation.

G. W. Brigman has accepted a position as assistant superintendent at the Greenville Cotton Mills, Greenville, N. C.

H. T. Godfrey has accepted the position of overseer of spinning at the Fountain Inn Manufacturing Co., Fountain Inn, S. C., to succeed F. McBee.

D. K. Dunn has accepted a position as overseer of carding at the Montgomery Mill, Montgomery, Ala.

J. W. Holt, assistant superintendent of the Greenville Cotton Mill, Greenville, N. C., has resigned his position with that company.

Robert Andrews, general manager of the Phoenix Linen Co., North Brookfield, Mass., has tendered his resignation to take effect as soon as a successor is appointed.

Alexander Paisley has accepted a position as overseer of dyeing and finishing at the Golden State Woolen Mill, Long Beach, Cal.

William Grindrod, overseer of weaving at the Uncasville Manufacturing Co., Uncasville, Conn., has resigned his position with that company.

Clarence Edmunds has reentered the employ of the Pendleton Woolen Mill, Pendleton, Ore., as overseer of finishing.

G. E. Martin has accepted the position of overseer of weaving at the J. O. Ballard & Co.,

Malone Woolen Mill, Malone, N. Y. He was formerly employed at the Piscataquis Woolen Co., Guilford, Me.

Charles F. McGill has accepted a position as overseer of finishing at the Middlesex Co., Lowell, Mass. He comes from the Newport Mill, American Woolen Co., Newport, Me.

A. R. Foushee has been elected president of the Roxboro Cotton Mills, Roxboro, N. C., to succeed the late J. A. Long.

F. D. Lockman has been promoted from overseer of weaving to superintendent of the Lockhart Mills, Lockhart, S. C.

H. C. Cranford has been promoted from second hand to overseer of weaving at the Lockhart Mills, Lockhart, S. C.

W. E. Williams has accepted a position as overseer of twisting and winding at the Louisville Cotton Mills, Louisville, Ky.

J. L. Fonville has accepted a position as overseer of carding at the Appalachian Mill, Knoxville, Tenn. He formerly held a similar position at the Marlboro Mills No. 1 and 2, McColl, S. C.

G. W. Chaney has accepted a position as overseer of spinning at the Dacotah Mills, Lexington, N. C. He was formerly employed at the Hartwell Mills, Hartwell, Ga.

H. R. Moss has accepted a position as overseer of carding at the Villa Rica Cotton Mill, Villa Rica, Ga.

Arthur Healy has been appointed overseer of finishing at the Waverly Mill, American Woolen Company, Pittsfield, Me. He formerly held the position as second hand at this mill for a number of years.

Everett W. Tripp, master mechanic and chief engineer at the Warren Manufacturing Company, Warren, R. I., has resigned his position with that company.

James Harrison has been appointed superintendent of the Slater Mfg. Company, Pawtucket, R. I. Mr. Harrison was in charge of the frame spinning department at this mill for a number of years.

Arthur Dubuque has accepted a position as overseer of ring spinning at the Slater Manufacturing Company, Pawtucket, R. I.

Alfred T. Platt has accepted a position as overseer of carding at the Slater Manufacturing Company, Pawtucket, R. I.

Fred W. Birkenshaw has accepted a position as overseer of finishing at Hall Bros. Mill, Norwich, Conn., to succeed James Preston. Mr. Birkenshaw comes from Pittsfield, Mass.

L. A. Perault has resigned as overseer of carding at the Morrison Woolen Co., Dexter, Me. He is succeeded by Clinton Fisher.

William E. McGill, formerly second hand in the finishing department at the Linn Woolen Co., Hartland, Me., has accepted a position as overseer of finishing at the Newport Mill, American Woolen Co., Newport, Me.

Joseph Sykes has been appointed superintendent of the Malone Woolen Mill, J. O. Ballard & Co., Malone, N. Y. He was formerly employed at the Lawrence Webster Co. at Malone.

Henry Woodward, buyer for the A. C. Woodward Narrow Fabric Mill of North Abington, Mass., died at his home in that city after returning from a trip to New York in the interest of the company. His death was unexpected. Mr. Woodward was born in England fifty-seven years ago and has been a resident of North Abington for the past twenty-five years. He leaves a wife and two sons.

DEATHS.

We have hesitated to chronicle the death of Evan Arthur Leigh, the senior member of the firm of Leigh & Butler, of Boston and Manchester, Eng., until all hope of his having been saved in the sinking of the Lusitania had been abandoned. Mr. Leigh had been in this country for some weeks during the spring and many of his friends and business acquaintances met him at the April meeting of the National Association of Cotton Manufacturers. He left Boston the day after the meeting to sail on the fated ship and the news of his death came as a great shock. Mr. Leigh was in his 65th year and was gradually relinquishing the actual management of the business to his nephew, Arthur Cecil Butler, whom he had taken into partnership in 1910, at that time changing the name of the firm to Leigh & Butler. Mr. Leigh was the son of Evan Leigh, the famous inventor of cotton machinery appliances, and had practical training in the machinery business, being associated for many years with his father in Manchester, Eng. He was himself an inventor of cotton machinery and thoroughly familiar with the technical and practical side of the business. The importing business, of which he had been the head, was established by his brother, Frederick A. Leigh, in 1869, and upon his death Evan A. Leigh came over from England and took charge of the business which has been largely increased. For many years the firm had represented Platt Brothers & Co., of Oldham, the largest builders in the world of cotton, wool and worsted machinery. Mr. Butler was in England at the time of his uncle's death and is still in that country. Evan A. Leigh was a man who had the respect and friendship of his business associates, customers and competitors and will be sincerely mourned by a wide circle of friends in America.

John Dexter Lewis, importer and manufacturer of dyestuffs, at Providence, R. I., died at his home in that city on May 21 after a lingering illness at the age of 70 years. He was for a number of years president of the Fourth National Bank and when that institution was merged into the United National Bank he became vice-president and held this office at the time of his death. He is survived by one son and a daughter.

John Emery Windle, a manufacturer of textile machinery in Worcester, Mass., died at his home in North Grafton, Mass. He was 62 years of age and had been in failing health for several months. His death was due to a general nervous break down. Mr. Windle was widely known as a mechanic and an inventor of textile machinery. For several years he was superintendent of a mill at Cherry Valley, Mass. He resigned that position to take up the manufacturing of cloth measuring machines, having invented the first power machine introduced in the United States. His wife, one son and a daughter survive him.

Gordon Dobson, for a number of years president of the Robert Dobson Co. and treasurer of the Waverly Woolen Co. of Pittsfield, Me., died recently in one of the local hotels in Bangor, Me. He had been in poor health for some time.

James Paton, chemist at the Mapele Silk Manufacturing Co., Paterson, N. J., died recently at the age of 67 years. He was born in Providence, R. I., but spent the greater part of his life at Southbridge, Mass. He is survived by his wife and one daughter.

George M. Nickerson, for twenty years overseer at the Pacific Mill, Lawrence, Mass., died at his home in Topsham, Me. He is survived by his wife and three grandchildren.

Ellis P. Morton, for thirty years agent of the Stevens Linen Works, Webster, Mass., died at his home in Augusta, Me., after a lingering illness. Mr. Morton had been in poor health for a number of years. He resigned his position with the Stevens Linen Works in 1907. The news of Mr. Morton's death was a shock to his many friends and acquaintances in Webster, Mass. Testimonials of the esteem in which he was held were generally expressed by those who knew him best. He was a member of Webster Lodge A. F. and A. M., also of Aleppo Temple Majestic Shriners. Mr. Morton was a thirty-second degree Mason, charter member of Manexitte Lodge, I. O. O. F., and charter member of National Lion Post G. A. R. His wife survives him.

Joseph Selden, proprietor of the Aetna Silk Co., Norfolk, Conn., died at his home in that place on May 25th of a complication of diseases. He was born in West Hartford, Conn., October 17, 1823. He represented Norfolk in the General Assembly in 1885. His wife survives him.

David R. Malcolm, vice-president and superintendent of the Allentown Spinning Co., Allentown, Pa., died at his home in that city after a short illness.

John Francis Roy, for a number of years treasurer and general manager of James Roy & Co., Watervliet, N. Y., manufacturers of woolen goods, died at his home in Troy, N. Y. He was born January 30, 1839, and was of Scotch descent, his father, Peter Roy, having lived in Sterling, Scotland. When fourteen years of age, Mr. Roy entered the woolen business at Watervliet. He is survived by three sons.

Henry S. Green, treasurer and founder of the Woonsocket Napping Machine Co., Woonsocket, R. I., and one of the most prominent figures in manufacturing circles in New England, died at his home in that city after a lingering illness. Mr. Green was born in Preston, Ont., Canada, April 16, 1832. He was an overseer of finishing of woolen and worsted goods previously to his taking up the maufacture of napping machines. He had been employed in some of the leading mills, such as the Clayville Woolen Mill, Clayville, N. Y., and the Harris Mill, Woonsocket, R. I. His wife and ten children survive him.

Thomas Gordon, one of the best known citizens of Harrisville, R. I., and a well known woolen boss carder, died at his home in that city from the effect of a shock which he sustained a short time ago. Mr. Gordon was born in Dudley, Mass., June 29, 1855, and came to Burrillville in 1878. He worked in Pascoag, R. I., three years and later accepted a position as overseer of carding at the Whipple Mill, which was run by Whipple & Walling. He afterwards went to Greenville, R. I., and was boss carder for Howard & McGuire for a number of years. He later returned to the Whipple Mill and had charge of carding there until the mill went out of business. His last position was with the Glengarry Company in the old Whipple Mill. Mr. Gordon was a member of the Wool and Worsted Overseers' Association. He leaves a wife, one son and a daughter.

Horace Wyman, who was associated with the late George Crompton in the manufacture of looms and superintendent of the Crompton Loom Works of Worcester, Mass., before it was taken over by the Crompton & Knowles Loom Works, died at his summer home in Princeton, Mass., at the age of 87 years.

John Rusling Keim, one of the oldest woolen manufacturers of Philadelphia, Pa., and founder of the company now controlled by the Shackamaxon Mill of that city, died May 8 at his home on Spring Garden St. in that city at the age of 82 years. He had retired from active business about ten years ago. A daughter and two grandchildren survive him.

George Henry Pearce, a highly respected citizen of Pascoag, R. I., and for a number of years employed as overseer of spinning at the Coronet Worsted Mill, Mapleville, R. I., died at his home in Pascoag. He was born in England, May 17, 1847 and retired from active mill life several years ago. He was a member of Granite Lodge, No. 33, I. O. O. F. His wife and two daughters survive him.

Henry R. Williams, senior member of The H. R. Williams Co., dealers in wool with office on Summer St., Boston, Mass., died at his home in Dorchester, Mass., at the age of 66 years. Mr. Williams retired from active business some time ago on account of ill health. He leaves a widow and two sons.

John Lees, for twenty-one years employed in the office of the Atlantic Mill, Providence, R. I., died in that city May 14. He had been in failing health for some time. He was born in Dunkinfield, Cheshire, Eng., Aug. 19, 1850.

New Publications

Any work noticed under this heading can be obtained, postage or express charges free, by sending the price listed to Lord & Nagle Company, 144 Congress St., Boston, Mass. A catalogue of textile books in the English language will be sent free on application.

A Method of Determining Costs in a Cotton Mill; by H. W. Nichols, chief instructor, New Bedford Textile School; 115 pages, 6 by 9; published by the author. Price $3.

Cost finding is of vital importance in every line of business and is a particularly complicated problem in textile manufacturing, owing to the large number of processes through which the material passes and the great variety of goods varying in quality and construction. Cost finding consists of two distinct branches. One is finding the actual cost of work done in a particular mill. The other is finding or estimating the cost of a new fabric submitted to a manufacturer. This book deals with the first branch of the subject, the contents being arranged under three heads: 1, Labor Cost; 2, Over-head Costs; 3, Raw Stock Cost. The operations are clearly explained and illustrated by practical examples. The book cannot fail to be of great value to cotton manufacturers.

Vocational Mathematics; by William H. Dooley, Principal Technical High School, Fall River, Mass.; 341 pages, 5 by 7; D. C. Heath & Co., Boston, Mass. Price $1.

This book has the highly commendable object of bringing mathematics home to the student by illustrating and explaining the subject by means of practical examples taken from the trades and occupations of every day life. It is a method that should be incorporated in all text books on arithmetic and algebra so that the student may connect what he learns from the books with what he sees around him outside of the school and with his daily work when he leaves the school. The author of this book offers it as an addition to the regular course of mathematics, but this would involve an increase in the already overloaded courses of the public school. The reform which it contemplates can be accomplished by substituting practical examples for the strange and fantastic problems that have always been a feature of text books on arithmetic and algebra.

The book begins with a review of arithmetic, after which the mathematics of the trades and industries are classified under the following heads: Carpentering and Building; Sheet Metal Work; Bolts, Screws and Rivets; Shafts, Pulleys and Gears; Plumbing and Hydraulics; Steam Engineering; Electrical Work; Mathematics for Machinists; Textile Calculations.

An appendix deals with the metric system, graphs, formulas, logarithms, trigonometry, tables of formulas.

The chapter on textile calculations is a very inadequate treatment of this branch of the subject, because of the importance of the textile industry, particularly in New England where the book has been compiled and published. The textile chapter begins with this incorrect statement regarding yarn numbering, which conflicts with the example given to illustrate it: "All kinds of yarns used in the manufacture of cloth are graded into sizes according to the weight per definite length. To illustrate: Worsted yarns are made from combed wools, and the size, technically called the counts, is based upon the number of lengths (called hanks) of 560 yards required to weigh one pound."

There is no reference to cloth calculations and the examples given to illustrate yarn calculations could easily be made more practical.

Some Aspects of the Tariff Question, by Prof. Frank W. Taussig, Professor of Economics in Harvard University, 365 pages, 6 by 8 1/2; Harvard University Press, Cambridge, Mass. Price $2.

This volume is one of a series of Harvard economic studies published under the direction of the Department of Economics at the University. It is a revised compilation of various articles published by Prof. Taussig which have appeared in the Quarterly Journal of Economics and the Atlantic Monthly, and to which is added material from lectures delivered at the Lowell Institute in Boston. The scope of the work is indicated by the following abstract of the table of contents: Duties, Imports Prices; Protection to Young Industries; The Principle of Comparative Advantage; Sugar, Iron and Steel; Textiles.

Organic Dyestuffs, by A. Wahl, Professor of Industrial Chemistry in the University of Nancy, translated from the French by F. W. Atack, Demonstrator in the Chemical Laboratories of the School of Technology, University of Manchester; 328 pages, 4 1/2 by 7; McMillan Co., 66 Fifth Ave., New York. Price $1.60.

Owing to the interest in the development of the dyestuff industry in English-speaking countries this volume appears at a particularly opportune time. It treats of raw materials, intermediate products and organic dyestuffs under the following heads: Coal Tar, Hydrocarbons, The Phenols; Sulphonation, Alkaline Fusion, Nitration, Reduction of Nitro-Compounds, Alkylation; Classification and Application of Dyestuffs, Nitro-Dyestuffs; Nitroso-Dyestuffs or Quinone-Oximes; Azo-Dyestuffs, Hydrazones; Stilbene Dyestuffs, Diphenylmethane Dyestuffs, Triphenylmethane Dyestuffs, Xanthene Dyestuffs, Acridine Dyestuffs, Anthracene Dyestuffs, Quinone-Imide Dyestuffs, Indigo and Indigoid Dyestuffs, Thiazol Dyestuffs, Sulphur Dyestuffs, Aniline Black.

The Silk Arithmetic; by Raleigh Weintrob, B. S., M. A., Principal of Public School No. 22, Paterson, N. J.; 47 pages, 5 by 7 1/2; Parker P. Simmons Co., New York. Price 35 cents.

The object of this book is to bring the arithmetic of the silk mill into the public schools, particularly of Paterson, where it will enable the scholars not only to learn arithmetic, but at the

same time to apply arithmetic to the processes of manufacturing silk goods in which many of them will find employment after they leave school. Incidentally the study of arithmetic in this form will give the scholar valuable instructions regarding the operations of silk manufacturing. The examples used to illustrate the subject have been taken from the mill and represent actual work.

Textile Color Mixing; by David Paterson, F. R. S. E., F. C. S., 123 pages, 5 1/4 by 8 1/4; Scott, Greenwood & Son, 8 Broadway, Ludgate, E C., England. Price $3.

This work is a second edition of "The Science of Color Mixing," and has been carefully revised, the title having been changed to one more appropriate for the scope of the book. Following is an abstract of the table of contents: Color a Sensation; Analysis of Light; Examination of Solar Spectrum; Color by Absorption; Color Primaries of the Scientist vs. the Dyer and Artist; Color Mixing; Secondary Colors; Tertiary Shades.

Technical Testing Methods in the Textile Industry (Textiltechnische Untersuchungsmethoden); by Prof. Dr. Wilhelm Massot; 137 pages, 4 by 6; G. J. Goeschen'sche Verlagshandlung, Leipzig, Germany.

This little volume is one of the Goeschen series of technical handbooks and deals with the chemical testing of textile materials and the supplies used in textile manufacturing. The contents are arranged under the following heads: 1, Testing Water; 2, Soap and Soap Products; 3, Fats; 4, The Analysis and Testing of Tanning Materials; 5, Indigo; 6, Logwood and Logwood Extracts; 7, Fastness of Artificial Colors; 8, Mordants and Dyestuffs on the Fibers; 9, Weighting Materials on Silk; 10, Analytical Methods for Testing the More Important Mordants; 11, Bleaching Materials; 12, Quantative Tests of Chemicals Used in Dyeing; 13, Quantative Tests of Fibers in Yarn and Mixed Fabrics; 14, Moisture in Textile Materials; 15, Yarn Numbering. The text is in German.

Dyestuffs and Coal-Tar Products; by Thomas Beacall, B. A., F. Challender, Ph. D., B. Sc.; Geoffrey Martin, Ph. D., M. Sc., B. Sc., and Henry J. S. Sand, D. Sc., Ph. D., 146 pages, 6 1/4 by 9 1/2; D. Appleton & Co., New York. Price $2.75.

This book is a reprint of various articles from "Industrial and Manufacturing Chemistry" to which some new material has been added. It appears at an opportune time owing to the temporary loss of the German supply of artificial colors. The contents are arranged under the following heads: Industry of Coal Tar and Coal-Tar Products; Industry of the Synthetic Coloring Matters; The Industry of Natural Dyestuffs; The Dyeing and Color-Printing Industry; Modern Inks; Saccharine and Other Sweetening Chemicals; The Industry of Modern Synthetic Drugs; The Industry of Photographic Chemicals.

BUSINESS LITERATURE

Textile Printing Machinery; Rice, Barton & Fales Machine & Iron Co., Worcester, Mass.

This is an attractive catalogue of 86 pages describing the textile printing machines built by the Rice, Barton & Fales Machine & Iron Co. The line includes straight printing machines to print up to fourteen colors There are also duplex and intermittent printing machines for printing on both sides of the fabric Special attention is directed to the fourteen color machine with duplex attachment giving as many as seven colors on each side of the cloth. The catalogue describes a number of special machines, including the laboratory machine for experimental work and a sampling machine which has been found useful in large plants. The catalogue gives a description of the mandrels and copper print rollers built by this company. There is an illustrated list of parts which are numbered on half-tone illustrations of the machines enabling the repair parts to be ordered without danger of mistakes. The catalogue also illustrates a special steam engine used for driving printing machines. Forcing machines for removing and forcing the copper print rollers on and off the mandrel. In addition to the descriptive matter the catalogue contains a number of very useful tables including an account of "straight line" calculations for cloth analysis, metric, thermometer, hydrometer, tank capacity and standard wire guage tables, also a list of water factors and common electrical terms.

Electrical Coil Winding Machinery; The Universal Winding Co., 95 South St., Boston, Mass.

The Universal Winding Co. have published a booklet describing the Leeson-Universal coil winding machine for winding concentric magnet coils, the wire being placed side by side similarly to spool thread. The difficulty with winding such coils arises from want of cohesion without supporting heads. This difficulty has finally been overcome by cross-winding fine cotton yarn simultaneously with the wire. The booklet describes the different styles of coils wound by the Universal process.

S. K. F. Ball Bearings in Machine Tools and Ship Equipments; The S. K. F. Ball Bearing Co., 50 Church St., New York.

How to obtain more power, faster feeds and higher speeds in connection with machine tools is the subject fully treated from an engineering standpoint in the new 72-page bulletin issued by the S. K. F. Ball Bearing Co. It contains carefully prepared data showing actual tests of machines, how to increase their efficiency, and how ball bearings applied to machines have produced remarkable savings of power by reason of ball bearings enabling the machine to operate at greater cutting feeds and higher speeds.

The Kissel Motor Car Company of Hartford, Wis., has received its sixth order for motor trucks from the European countries at war. The latest commission is for thirty ambulances for use by the Serbian government.

Industrial Notes

A NEW SIZING HOUSE

The Sizing Specialties Co., of Jersey City, N. J., which was organized some months ago, has been meeting with such good success that their factory capacity has been doubled four times within the last six months. They are very optimistic as to the future, having secured orders from some of the largest mills from whom they have had many duplicate orders come in. Their line includes sizings for cotton, woolen, worsted, silk and the paper trade.

MANUFACTURED AT A TEXTILE SCHOOL

The New Bedford Textile School has sent to the Mount Hope Finishing Co. and the New Bedford and Agawam Finishing Co. two cases of goods to be finished. These goods are the work of the students of the school. They evolved the designs and conducted every process through the spinning of the yarn and the weaving of the cloth. The goods embrace a wide range of fabrics including lenos, lappets, stripes, checks and Jacquard designs. They make one of the finest collections of fabrics yet produced at the New Bedford school. The finishing companies will finish these goods gratis out of good will to the school.

BUELL MILLS TO BE SOLD

The famous Buell Mill Plant, located at St. Joseph, Missouri, which has been idle for the last two years, is being offered for sale at a price less than a quarter of its original cost. During the time the plant has been shut down care-takers have had charge of the property, kept the machinery properly oiled and cared for. Heat has been in the building and it has not been allowed to deteriorate and it is ready to be started up at once. St. Joseph is located in the heart of a wool country and has excellent trunk line railroad facilities. The mill has eight sets of cards and 53 broad looms and a complete equipment for making blankets, robes, flannels, etc. The Commerce Club of St. Joseph, Missouri, is desirous of having the property started up.

MAZDA C LAMPS 220 TO 250 VOLTS

There are now available Westinghouse Mazda C lamps from 200 to 1000 watts, for 220 to 250 volts. Heretofore these Mazda C lamps (which are the latest development in incandescent lamps and the most efficient lighting units available) have been supplied only for 105 to 125 volts. The manufacture of this type of lamp has progressed so rapidly, however, that the Westinghouse Lamp Company is now able to furnish them for the higher voltages. The table below gives the specifications on these lamps. In appearance they resemble the 105 to 125 volt lamps:

Volts	Watts	Bulb	Base	Diam.	Max. Length	Std. Pkg. Qty.	Price Clear	Price Frosted
220-250	200	PS30	Med. sc. sk.	3¾"	*8¾"	24	$2.75	$2.82
" "	300	PS35	Mogul Screw	4⅜	9¾	24	3.75	3.85
" "	400	PS40	Mogul Screw	5	10	12	5.00	5.15
" "	500	PS40	Mogul Screw	5	10	12	5.75	5.90
" "	750	PS52	Mog. sc. sk.	6½	13⅜	8	7.20	7.45
" "	1000	PS52	Mog. sc. sk.	6½	13⅜	8	8.40	8.65

*Length over all

PANAMA CANAL COMMISSION AWARD

The contract for furnishing material for complete pumping plant for Dry Dock No. 1, Balboa Terminals, Balboa, Canal Zone, Isthmus of Panama, was awarded by the Panama Commission to Henry R. Worthington, New York. The contract involves design, fabrication and delivery on the Isthmus of the structural, mechanical, electrical and hydraulic parts required for this installation. The pumping plant comprises four main pumps, two drainage pumps and one bilge pump. The average overall efficiency or the ratio of the pump input to the work done by each unit in pumping against the total heads encountered is guaranteed to be not less than 64.5 per cent. The general character of Henry R. Worthington design, ease and certainty of operation, accessibility of all parts, freedom of pump well from encumbrances, simplicity, reliability and durability were the determining factors in this award. The time for complete delivery of all the material is guaranteed within two hundred and ten days.

THINGS A LUMP OF COAL CAN DO

The unbelievable variety of things which modern science is able to evolve from the sable modesty of a lump of coal is shown in graphic fashion by the Barrett Manufacturing Company in its exhibit at the San Francisco Exposition.

An enormous block of soft coal is shown surrounded by its innumerable children. The first generation consists of ammonia, illuminating gas, crude benzol, coal tar and coke.

The Crude ammonia is the parent of household ammonia and of the anhydrous ammonia used in producing artificial ice. Then there is ammonium chloride, an important element in electric batteries. Ammonium nitrate is used in the production of high explosives. Ammonium bicarbonate is valuable in the modern baking of food, and most important of all is ammonium sulphate, a powerful soil nitrifying agent, which is becoming of enormous importance to American farmers as a fertilizer. Plants of various kinds are shown that have been grown with and without the ammonium

sulphate under identical conditions, exhibiting a striking difference in the strength of the crops.

Illuminating gas burns up in a blaze of light and leaves no heirs.

Crude benzol, the next of King Coal's daughters, has a beautiful progeny of analine dyes in all the colors of the rainbow. It is also of great importance in the manufacture of automobile tires and in the production of artificial leather. Then there is toluol, a basis for modern high explosives and much in demand for the war.

Coal tar, the fourth of Coal's immediate descendants, is the mother of Tarvia, the bituminous binder for building automobile-proof roads, which is now being used on many thousands of miles of macadam all over the United States. Barrett Specification Roofs, consisting of tarred felt and pitch, are used for practically all the great commercial buildings such as the New York skyscrapers. There is also a long list of the ready-roofings used by farmers for their barns, felt and building papers for the lining of walls to keep out heat and cold, and waterproof felts, which are used with pitch for the lining of excavations, basements and tunnels to exclude dampness of the soil. Then there is Paving Pitch used in the joints of block pavements for city streets. Creosote Oil, which can be impregnated into wood thereby, makes it proof against decay and gives us wood block street pavements, durable piling and long lived fence posts and mine timbers. Creosote alone is worth $25,000,000 a year to the country in its ability to prolong the life of fence posts

In addition, coal tar is the parent of innumerable chemical and medical products, especially phenol or carbolic acid, an indispensable medical disinfectant with innumerable industrial uses, including the process of manufacturing phonograph records.

Naphthalene or coal tar camphor is useful in keeping moths out of clothing.

Among the other great-grandchildren in the carbolic branch are picric acid, a high explosive, and a long list of bactericides and disinfectants, including the wonderful Pyxol, which is twenty times as powerful as carbolic acid and is death to germs of all kinds, yet perfectly harmless to animal life.

Coke is useful as fuel and has special value in the steel industry.

All told, coal has the largest variety of derivatives of anything that is dug out of Mother Earth. The Barrett Company's exhibit shows many of the processes and has been well planned. It is in the Palace of Mines and Metallurgy and is always surrounded with a group of amazed spectators.

EXHIBIT OF THE BARRETT MANUFACTURING CO. AT THE SAN FRANCISCO EXPOSITION

VENEER BOXES PROVE ECONOMICAL

A constantly increasing number of textile mills in New England and elsewhere are using three-ply veneer boxes for shipping goods instead of th old style wood cases. Besides the added strength, security and neatness of the package, it has been found that they pay for themselves in the saving of freight charges. Railroads today cannot afford to miss a single penny of income that is their just due and weights are scanned more closely than ever before. Many shippers do not realize the loss they sustain in freight by shipping heavy packages. These veneer boxes have been found to combine the maximum strength with the minimum weight. They are successfully made in all sizes for loads up to 800 pounds. The Veneer Products Co., Greenville, Me., have made a specialty of these veneer boxes and invite manufacturers of all classes of textile goods to send to them the inside dimensions of the cases they are now using and the approximate weights they carry and they will send figures showing the economy in using their "Monarch" veneer cases based on long experience with many textile mills.

The firm of John M. Cromie & Co., of Philadelphia, is being liquidated. John M. Cromie and William C. Plunkett of the Capron Knitting Co. have formed a co-partnership under the name of Cromie & Plunkett, with office at 366 Broadway, New York City. The new firm has been appointed sole representative for the line of hosiery made by the Ambrose West Knitting Co., Plymouth, Pa. Spencer R. Naylor has been elected treasurer of the Ambrose West Knitting Co. with his office at Plymouth.

THE NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS

The thirty-third semi annual meeting of the National Association of Wool and Worsted Overseers was held at Rocky Point, R. I., on May 15 and was largely attended by members, there being about 350 present. A number of new applications for membership in the Association were received and the following officers were nominated for election at the next annual meeting:

James Wilson, First Vice President, was nominated for President. Joseph H. Driscoll, Second Vice President, was nominated for First Vice President. Robert J. Harrington, Third Vice President, was nominated for Second Vice President and William F. Wicks, E. Fred Deverall and C. A. Williamson were nominated for Third Vice Presidents. Walter Pickford was nominated for Secretary and Thomas Buchan for Treasurer. For Secretary of the Beneficiary Department, William E. Davison was nominated and Thomas Buchan, Treasurer of this Department.

The following members were present:

CONNECTICUT

Fred Ashton, Putnam.
J. J. Burns, Moosup.
Jas. J. Burns, Putnam.
Edw. F. Dempsey, Quinebaug.
Wm. E. Davison, Putnam.
Louis S. Carmark, Jr., Mechanicsville.
Jos. F. Miller, Dayville.
Thos. Brooks, East Glastonbury.
Armand Henault, Dayville.
Wm. Knox, South Coventry.
J. E. Bradley, Talcottville.
A. B. Shepherd, Stafford Springs.
Wm. F. Hulligan, Killingly.
F. J. Durkan, Greenville.
Gilford Dyer, Central Village.
Geo. F. Edson, Mechanicsville.
Wm. Eyers, Central Village.
Wm. G. Jowett, Central Village.
Geo. Fraser, Norwich.
F. P. Creighton, Quinebaug.
Bert O. Cook, Central Village.
Wm. Gillooly, Killingly.
Cornelius Hamill, Killingly.
Chas. C. Garner, Yantic.
John G. Greenhalge, Central Village.
Cornelius Grimley, Putnam.
Geo. J. Greendormer, Stafford Springs.
T. J. Sexton, Rockville.
Thos. C. Scott, South Glastonbury.
James Mack, Quinebaug.
W. H. Nettleton, Central Village.
John J. Quinn, Stafford Springs.
Harry H. Mayall, Middletown.
John J. Lyons, Moosup.
H. J. Maloney, Hartford.
Thos. Richmond, Putnam.
Fred Thorp, Talcottville.
John T. Yale, Stafford Springs.

FLORIDA

J. H. Sedgwick, Stark.

MAINE

Benj. Eyers, North Vassalboro.
W. H. Evers, South Windham.
Albert L. Mabbett, Newport.
Chas. E. McGill, Newport.
Thos. J. Phelan, Fairfield.
Thomas Thomas, Pittsfield.
Wm. M. Wayness, Pittsfield.
C. A. Williamson, Foxcroft.

MASSACHUSETTS

M. H. Roberts, Pittsfield.
Turner Rollinser, Holyoke.
Otto Ruhlins, South Hadley.
J. H. Rule, North Billerica.
Frank L. Whittemore, Quinapoxet.
Wm. F. Wicks, Haverhill.
Alfred Wigglesworth, Pittsfield.
Walter Wilber, Worcester.
J. E. Truesdale, Jefferson.
J. D. Turner, Lowell.
James Bolton, Fitchburg.
Chas. E. Williams, Worcester.
J. J. Sullivan, Franklin.
Henry Shane, Leominster.
Jas. J. Rae, Worcester.
Richard J. Owens, Fitchburg.
J. N. Paradis, Boston.
Thos. Pendergast, Franklin.
Chas. E. Wood, Fitchburg.
James Speed, Boston.
Jas. Pratt, North Andover.
A. D. Mansell, Millbury.
Jas. R. Sherman, Farnumsville.
T. H. Fraser, Glendale.
T. Frusher, Jr., North Adams.
C. S. Gove, Uxbridge.
Frank Manock, Lawrence.
John C. Marley, Lawrence.
Augustus C. Neff, Millbury.
Chas. E. Wilson, East Douglas.
Wm. E. Wilson, Boston.
John H. Winslow, Jefferson.
M. J. Fagan, Concord Junction.
Geo. A. Farr, North Adams.
Joseph Feather, North Adams.
John Ogden, Lowell.
Ben Oldfield, Lawrence.
Geo. Mahelsky, Webster.
John H. Mahoney, North Adams.
Irving Ward, Pittsfield.
Ed. F. McGlone, Uxbridge.
Arthur Slater, North Andover.
Wm. A. Ackroyd, Pittsfield.
Geo. Greenbach, Uxbridge.
Asa Garth, Fitchburg.
Chas. O. Geer, North Scituate.
Thos. Lenihan, Webster.
J. W. Linnehan, Boston.
Fred F. McEny, Fitchburg.
James M. Magner, Medford.
Wm. McKinnon, Farnumsville.
Jas. Lees, Holyoke.
John E. Graham, Lowell.
John Lawton, Millbury.
Jos. J. Welinger, North Adams.
Wm. Bagley, Millbury.
R. E. Bailey, Foxboro.
C. H. Blackburn, Monument Beach.
Jas. T. Lyons, Pittsfield.
Wm. McBride, North Billerica.
F. L. McCarthy, Pittsburg.
Frank A. Duff, Plymouth.
Edw. A. Ducharne, Pittsfield.
John Durkan, Maynard.
Jacut Ashler, Adams.
B. F. Fetherston, North Billerica.
Joseph N. LaRose, Cherry Valley.
Chas. I. Akers, Quinapoxet.
Louis M. Allison, Worcester.
Nilson C. Lambert, Webster.
Herbert Ellis, Franklin.
Robert J. Lang, Farnumsville.
Wm. Ahern, Worcester.
Wm. Illingworth, Franklin.
John Archer, Franklin.
Joseph E. Armig, Millbury.
Richard Arnold, Worcester.
Joseph Fenon, Worcester.
Chas. A. Kennedy, Pittsfield.
F. W. Kennedy, Lawrence.
Simon P. Kenny, North Andover.
E. W. Keough, Middleboro.
John F. Keough, Middleboro.
Geo. H. Hinchliffe, Oxford.
I. B. Hillerd, Worcester.
Wm. Jowett, Southbridge.
Alex. T. Carmichael, N. Andover.
Vincent J. Degnan, Quinapoxet.
J. H. Crouther, Franklin.
R. J. Harrington, Dalton.
Wm. C. Hay, Uxbridge.
Jas. H. Cobb, Caryville.
John A. Heaton, Webster.
John Heffernan, Blackstone.
Robert S. Dodds, Uxbridge.
A. Dregham, Worcester.
D. G. Byers, Farnumsville.
Thos. Byron, Clinton.
Michael M. Bresett, Pittsfield.
John A. Chidlow, Lawrence.
Henry J. Perry, Boston.
E. F. Darling, Franklin.
Joseph Bonley, Uxbridge.
Jas. Clavin, Webster.
Fred W. Myers, New Boston.
Arthur J. Micks, Lawrence.
P. Reilly, Uxbridge.
A. L. Remington, Franklin.
F. L. St. George, West Medway.
John Scholes, Lowell.
Thos. Buchan, Hyde Park.
Walter Pickford, Clinton.
W. B. Perin, East Douglas.
E. S. Eddy, Worcester.

NEW HAMPSHIRE

James Hirst, Peterboro.
Peter McKinnon, Tilton.
M. E. Brouncll, Dover.

NEW JERSEY

Jas. W. Williams, Raritan.
Geo. A. Judson, Raritan.

NEW YORK

H. L. Preston, Amsterdam.
A. M. Knight, New York.
C. B. Jennings, Amsterdam.

PENNSYLVANIA

John F. Bolger, Philadelphia.
Geo. H. Clemence, Philadelphia.
P. F. Hanemi, Clifton Heights.

RHODE ISLAND

Benj. B. Bray, Jr., Lafayette.
Medric Brendeau, Woonsocket.
C. J. Henault, Nasonville.
John T. Hardman, Pascoag.
Ephraim Bedford, Thornton.
J. E. Bennett, Central Falls.
Arthur H. Little, Providence.
Frank E. Logan, Pascoag.
J. J. Lucknor, Woonsocket.
T. E. Bottomly, Esmond.
Geo. H. Bottomly, Esmond.
John Guerin, Woonsocket.
Hulian J. Guerin, Woonsocket.
R. J. Hackett, Thornton.
C. F. Hacking, Providence.
Harry H. Hodgman, Nasonville.
A. B. Crowell, Harrisville.
Robert Coupe, Providence.
Joshua B. Curtis, Wakefield.
J. Dolan, Harrisville.
Walter E. Devine, Providence.
E. Fred Deverall, Providence.
Lewis Dicks, Woonsocket.
Jas. G. Dinagen, Pascoag.
Matthew Ainley, Providence.
Emmett Ainley, Providence.
Herman Ambach, Lymansville.
J. J. Cobb, Providence.
R. E. Chase, Washington.
Louis Carmack, Providence.
Jas. C. Carmack, Woonsocket.
Frank Christian, Oakland.
F. W. Clarkson, Glendale.
J. H. Driscoll, Manton.
W. E. Chamberlin, Esmond.
Fred Carter, Whipple.
James G. Burnett, Providence.
Joseph Lavaille, Woonsocket.
T. J. Jennings, Centreville.
Ernest Jones, Davisville.
John Jones, Centreville.
Geo. J. Fagna, Woonsocket.
C. M. Hurst, Providence.
M. H. Hutchens, Providence.
Ernest Haynes, Central Falls.
H. B. Hazen, Davisville.
Geo. Kavanagh, Providence.
Chas. A. Keegan, Pascoag.

John E. Lancaster, Pawtucket.
James Knox, Woonsocket.
J. C. Knox, Centreville.
Wm. Waterhouse, Providence.
John Henderson, Providence.
Henry Higgs, Providence.
John T. McGeough, Woonsocket.
Henry Hopkins, Providence.
Wm. C. Hubbard, Woonsocket.
Frank W. Austin, Bristol.
Chas. Elder, Esmond.
Anthony Larmie, Esmond.
Edw. Graves, Providence.
David Webster, Chepachet.
David H. Webster, Providence.
Samuel J. Wels, Providence.
Eric A. Whithead, Central Village.
H. Metcalfe, Providence.
Walter Gledhill, Providence.
Louis W. Fedler, Woonsocket.
James Wilson, Providence.
Ernest A. Sutcliffe, Providence.
Edgar M. Taft, Bridgeton.
N. Taten, Woonsocket.
Edw. D. Tetler, Washington.
Richard Thomas, Thornton.
Jas. E. Leach, Lafayette.
Moses Spencer, Pawtucket.
H. Spinney, Harrisville.
Henry G. Steinberg, Providence.
Chas. Stephenson, Woonsocket.
James A. Toop, Washington.
John F. Moore, Centreville.
John J. Monahan, Providence.
Leonard S. Morley, Thornton.
Geo. Murray, Mapleville.
Jas. H. Walsh, Central Village.
John F. Fitzpatrick, Woonsocket.
Harry J. Silvy, Whipple.
John R. Simpson, Pawtucket.
Andrew Smith, Westerly.
E. B. Smith, Woonsocket.
James Southwell, Providence.
Thos. R. McClure, Woonsocket.
Jas. McDowell, Providence.
Jas. J. Calnan, Pascoag.
Joseph Wood, Providence.
Fred Newcombe, Providence.
Walter Magson, Woonsocket.
M. E. Quinn, Pascoag.
A. S. Quirk, Masonville.
Geo. J. Raesch, Manton.
J. H. Pickford, Carolina.
Thos. F. Cupwell, Providence.
Andrew S. Thompson, Burrillville.
Chas. H. Thompson, Burrillville.
H. S. Ringland, Providence.
R. W. Ringland, Oakland.
Wm. Schofield, Providence.
R. C. Shortman, Providence.
J. A. Reynolds, Bristol.
M. Nelligan, Lafayette.
Thos. J. Ryan, Pascoag.
J. E. Quinn, Providence.
F. W. Perkins, Woonsocket.
Orrville Pero, Woonsocket.
David F. Matterson, Pawtucket.
Tom Parkin, Olneyville.
Francis E. Patterson, Bridgton.
Alphonse Pelletier, Mapleville
M. Lender, Esmond.
Thos. H. O'Neill, Pascoag.
Chas. H. Atteridge, Providence.
P. J. Malone, Bridgeton.
Albert Gill, Providence.

VERMONT.

Forest V. Adams, Evarts.

THE RUSSIAN MARKET FOR AMERICAN GOODS

"The field for American business development in Russia is unlimited," says W. V. Logan, of The Goodyear Tire & Rubber Company, who has just returned from the Czar's domains. "All evidence is that Russia is having a great awakening. Germans have had much of Russia's commerce. No matter what the outcome it will be long, if ever, before the war feeling subsides. And that makes America's opportunity. Few people in this country appreciate Russia's vastness, its lack of development in industries of its own, and its possibilities."

Mr. Logan sailed from New York in January. To reach Petrograd he went first to London; to New Castle by rail; steamer to Bergen, Norway; thence to Christiana and Stockholm; from there instead of across the Baltic he went to the North of Sweden, within 36 miles of the Arctic Circle, going around the North of the Baltic in reindeer sleighs; through Finland; then by train to Petrograd, the trip from London requiring seven days. He remained in Petrograd ten weeks, except for two short trips to Moscow.

"Moscow, the ancient capital, is Russia's business center. Petrograd is the governmental and diplomatic headquarters," says Mr. Logan. "Judging by those I encountered, the Russians are a most hospitable and courteous people. The official language seems to be French, and some English. German is known extensively, but now there is a war ban against speaking it, with heavy fines for offenders.

"All industries are now centering on government work. One hears nothing but war talk. Russia has 8,000,000 men in training or action and everywhere there seems serene confidence that nothing but victory is ahead.

"In Russia it seems that people either have plenty of money or none at all. Those who have are great spenders. Food supplies are apparently plentiful, but city prices, hotel prices, are away up. I saw strawberries at 35 cents apiece; apples at 75 cents. Hotel fare is affected now by the fact that most of the better cooks and chefs are with the army."

DECATIZING MACHINES BUILT IN THE UNITED STATES

L. H. A. Schwartz & Co., 40 Central St., Boston, report increased inquiry for their dry decatizing machines, including several repeat orders. As these machines are now being built in this country deliveries are not affected by the European war and can be made promptly.

GRADUATION EXERCISES

The New Bedford Textile School held its graduation exercises for day and evening classes in the school hall on June 17th. Lieut. Governor Grafton D. Cushing represented the State and Rev. William B. Geoghegan of New Bedford delivered the principal address of the evening.

The Manufacturers' medal was awarded to the student having the highest average standard for three years in the general cotton manufacturing course. The presentation made by John Sullivan, agent of the Taber Mill and a trustee of the School.

Among the students who received diplomas was John F. Hagen, who had done eight years' work in the evening classes. Mr. Hagen received a diploma for the carding and spinning course. He maintained a very high standing in all of the subjects taken. When he has taken a small amount of additional work he will be entitled to a diploma in the weaving and designing course.

LOWELL TEXTILE SCHOOL

The graduation exercises of the Lowell Textile School were held on Friday, June 4, at 2.30 P. M. The program, which proved an interesting one, was as follows:

Overture, "Martha" ..... Flotow
Orchestra.
Address of Welcome .. President A. G. Cumnock
Address,
Hon. Dennis J. Murphy, Mayor of Lowell
Selection, "High Jinks" ..... Friml

Orchestra.
Address ..... Hon. Samuel L. Powers
"The Progress of Technical Education."
Trombone Rag, "Knock Out Drops" Klickmann
William Kinghorn.
Announcement of Awards
Presentation of Diplomas and Degrees
Charles H. Eames, Principal
Finale "Honor Bound" ..... Boehnlein
Orchestra.

The list of graduates will appear in our July issue.

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PHILADELPHIA TEXTILE SCHOOL

The commencement exercises of the Philadelphia Textile School were held at the Broad Street Theatre, on Thursday evening, June 3 at 8 o'clock. The principal address of the evening was delivered by Philander P. Claxton, United States Commissioner of Education, his subject being "The Place of Art in Democratic Education." Immediately following the exercises the annual exhibition of students' work was held in the school building. The exhibition was open to the public from 10 A. M. to 5 P. M. June 4 to June 12 inclusive.

ALUMNI ASSOCIATION OF THE PHILADELPHIA TEXTILE SCHOOL

The fourteenth annual meeting of the Alumni Association of the Philadelphia Textile School was held June 3 and 4. The sessions began June 3, shortly after noon, with a luncheon and informal reunion at the school. The election of officers was the first business of the association, after which the following papers were presented by members: A Few Words About Cuba, by Ernest Heller; Points on Cotton Duck Manufacture, by Wm. W. Arnold, Jr.; The Merchandising of Southern Colored Cotton Goods, by T. H. Haywood; Fundamentals of Knitting, by John Naab; Mixing in the Cotton Mill, by Carl Nagel; The Manufacture of Artificial Lustrous Threads by the Viscose Process, by Warren F. Cooper; Defective Silk: Its Causes and Effects, by Irving Levy.

The steamer "Samuel H. Ashbridge" left the wharf at 8.30 A. M. Friday for the annual cruise. Several hours were spent at the park where a variety of games were thoroughly enjoyed. The banquet was held at the Manufacturers' Club the speakers of the evening being the Hon. Edwin S. Stuart, Charles H. Harding, Frank B. McClain and Wilson H. Brown.

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FOREIGN TRADE OPPORTUNITIES

The Bureau of Foreign and Domestic Commerce, Washington, D. C., has published the following items regarding opportunities for foreign business in textile materials. Reserved addresses may be obtained from the Bureau and its branch offices. Request for each opportunity should be on a separate sheet and the file number given.

Textile machinery, No. 16073: One of the commercial attaches of the Department in the Far East has transmitted a report relative to an opportunity to sell American textile machinery, etc. A complete copy of the report may be had on application to the Bureau of Foreign and Domestic Commerce and its branches.

Underwear, hosiery, gloves, etc., No. 16094: An American consular officer in New Zealand has reported that a wholesale dealer in his district is scheduled to arrive in the United States about April 8 for the purpose of purchasing underwear, hosiery, gloves, denims, etc.

Material for clothing, No. 16250: An American consular officer in Canada reports that a business man in his district desires to be placed in communication with American manufacturers of high-grade goods for women's dresses and men's suits. References are given.

Textile machinery, No. 16163: An American consul in Russia reports that a firm wishes to correspond with American manufacturers of textile machinery. It is stated that the firm has had 50 years' experience in this line of business. Correspondence may be in English.

Silk, cotton, and woolen fabrics, etc., No. 16164: A firm in France informs an American consul that it wishes to represent, on a commission basis, American manufacturers of cotton, silk, and woolen fabrics, knit goods, such as hosiery for women, and sweaters, etc. Reference is given.

Hosiery, No. 16340: An American consular officer in England reports that a business man in his district desires to represent American manufacturers of cheap hosiery. Reference is given.

Linings for clothing, etc., No 16300: Supplementing Foreign Trade Opportunity No. 15484, an American consular officer in Canada reports that the business man in question has not received favorable replies, and again requests that American manufacturers and exporters supply him with quotations for materials to be used for sleeve linings and pocketings for clothing. It is stated that this man expects to be in the United States during April, with a view to conferring with business people who are in a position to supply these materials.

Flax yarn, etc., No. 16154: A representative of one of the foreign legations in Washington, D. C., has informed the Bureau of Foreign and Domestic Commerce that he is in receipt of inquiries from firms in his country which are desirous of receiving information relative to flax yarn and "sericose."

Wearing apparel, No. 16168: An American consular officer in Great Britain reports that a dealer in his district wishes to communicate with manufacturers of jerseys, blouses, and soft shirts.

Gloves, No. 16323: An American consular officer in England reports that a business man in his district desires to establish commercial relations with American exporters of knitted gloves. Samples should be sent, together with c. i. f. quotations. Prices should be stated in English currency.

Underwear, No. 16314: An American consular officer in Ireland reports that a firm in his district desires to purchase large quantities of cotton-fleeced underwear for women. Quotations may be in American currency and should be f. o. b. New York or other American ports. Cash will be paid by New York draft.

Clocks, watches, knitted goods, gloves, etc., No. 15910: A business man in Russia has informed an American consular officer that he wishes to purchase clocks, watches, cheap grades of alarm clocks, fobs, and crystals; knitted goods, gloves, hosiery, and underwear for women; thread for sewing, knitting, and embroidery work. He wishes to receive quotations in rubles, if possible, c. i. f. Russian ports. Correspondence should be in the Russian language.

Machines, underwear, etc., No. 15866: An American consul in Russia reports that a business man in his district desires to purchase metal lathes and machines for the production of knitting-machine needles and of various fasteners for underwear, clothing, corsets, shoes, etc. He states that he also desires to represent American manufacturers of the above lines. Correspondence should be in Russian, French, or German. Prices should be quoted in Russian values. C. i. f. quotations should be submitted.

Sewing thread, No. 16004: Supplementing foreign trade opportunity No. 15932, an American consular officer in Mexico reports an opportunity for the sale of sewing thread.

Linen thread and canvas for shoes, No. 16025: An import agent in Europe has informed an American consul that he will pay cash f. o. b. steamer in New York for linen thread and canvas for shoes. He desires to establish permanent connections for future business. Correspondence may be in English. American reference is given.

Wool, lumber, leather, etc., No. 16023: A firm in Italy has informed an American consul that it wishes to establish commercial relations with American exporters of raw wool, washed or unwashed; timber and lumber of all sizes and kinds; and tanned hides of all kinds and qualities. Correspondence may be in English or French, but is preferred in Italian. Weights and measurements may be in English equivalents. Prices should be quoted f. o. b. Genoa, Leghorn, or Naples, in gold lire (gold lira equals $0.193). References are given and required. Immediate replies are necessary.

Cotton yarns, No. 16018: The Bureau of Foreign and Domestic Commerce is in receipt of a letter from a firm in South America which wishes to correspond with American exporters and manufacturers of cotton yarns. Bank references are given.

Hemp, No. 16019: An American consular officer in Russia has been requested to supply the names and addresses of American importers of Russian hemp. Correspondence should be in Russian or German.

Hosiery, gloves, etc., No. 16318: An American consular officer in Canada reports that a business man in his district desires to correspond with American manufacturers of cotton and woolen goods, hosiery, underwear, gloves, etc. He desires to represent on a commission basis. Reference is given.

Yarns, No. 16299: The commercial agent of the Bureau of Foreign and Domestic Commerce at New York City reports that a business man in that city has received a communication from an industrial bureau in the Netherlands transmitting the name and address of a firm in that country which desires to purchase woolen and cotton yarns from the United States.

Cotton, silk, wool and linen textiles, novelties, drugs, etc., No. 15810: A company in South America informs an American consular officer that it desires to represent American manufacturers and exporters of cotton, silk, wool, and linen textiles; novelties and men's furnishings; perfumeries, soaps and all classes of toilet articles, drugs, chemical products, rubber goods, hardware, glassware, porcelain, enamel, and kitchen ware, and general lines for bazaars. Bank reference is offered.

Clothing, No. 16393: A business man in Russia informs an American consular officer that he desires to receive catalogues, samples, and full information from American manufacturers of clothing. Correspondence should be Russian.

Yarn and needles, No. 16389: An American consular officer in Columbia reports that a business man in his district desires to purchase cotton and linen yarn. He is in the market for No. 14 yarn, white and colored, sized; No. 15 yarn, white and colored, unsized; and No. 20, white and colored, unsized. He also wishes quotations on white and colored mercerized linen yarn. Samples should be submitted, together with quotations f. o. b. New York. It is stated that cash will be paid. Samples of the yarn which is desired may be inspected at the Bureau of Foreign and Domestic Commerce or its branch offices. It is explained that he will use about three tons per month. He also wants the address of manufacturers of needles for point underwear machines.

Hosiery, gloves, etc., No. 16424: A firm in Australia informs an American consular officer that it desires to represent, on a merchant basis, American manufacturers of hosiery, underwear, gloves, etc. It is stated that the firm will pay cash against shipping documents in foreign ports. Prices should be quoted f. o. b. American ports.

Knit goods, No. 16410: One of the commercial agents of the Bureau of Foreign and Domestic Commerce in Central America reports that an American merchant in that country desires to correspond with manufacturers of knit goods, such as underwear, hosiery, etc. Prices should be quoted f. o. b. New York, New Orleans, or Mobile. Correspondence may be conducted in English.

TREASURY DECISIONS

T. D. 35320. April 13, 1915. Madras muslin, jacquard figured upholstery goods. 1. Upholstery goods. The term "upholstery goods" is used in paragraph 258 of the tariff act of 1913 to cover fabrics in the nature of tapestries suitable for use as draperies, hangings and upholstery furniture. 2. Madras muslin. Madras muslin is not "upholstery goods" within the tariff sense, and is suitable at the appropriate rate according to the average yarn number under paragraph 252, act of 1913. 3. Madras muslin curtains. Madras curtains are not upholstery goods, as they are manufactured from jacquard figured cotton fabrics they are dutiable at 30 per cent. ad valorem as "jacquard figured manufactures of cotton" under paragraph 258. In the matter of protests 732590, etc., of Snow's United States Sample Express Co. et al against the assessment of duty by the collector of customs at the port of New York.

T. D. 35332. April 20, 1915. Woven fabrics with loops on one edge. Narrow woven cotton articles imported in lengths with loops on one edge of the fabric, used by Bohemian people solely for the purpose of holding the ends of pillow-cases together, which is accomplished by attaching the articles to the ends of pillowcases and inserting a braid or tape into the various loops and drawing them together, are properly dutiable at the rate of 25 per cent. ad valorem under the provision in paragraph 262, tariff act of 1913, for "fabrics with fast edges not exceeding twelve inches in width," rather than as "cotton trimmings." In the matter of protest 755766-54120 of G. W. Sheldon & Co. against the assessment of duty by the collector of customs at the port of Chicago.

T. D. 35342. April 14, 1915. Crash-Toweling. United States v. Douglas & Berry. 1. Plain Woven Fabrics—What are not. These goods were so woven as to produce a distinctly discernible border the whole length of the piece, and this border, whether in color or plain white, constitutes a figure. Irrespective of the particular machinery employed in producing this effect the goods were figured and not plain woven. 2. No Commercial Designation. The testimony fails to show that there was, prior to the enactment of the tariff act of 1913, any recognized class of goods in the trade known as "plain woven fabrics." 3. Effect of Judicial Construction. Prior to the enactment of the present law this court, in White v. United States, had held goods like these in question excluded from the term "Plain woven fabrics." It is this decision, rather than an administrative practice, that the Congress must be presumed to have followed.

T. D. 35388. May 3, 1915. Wearing apparel. United States v. Snow's United States Sample Express Co. Shirt Bosoms of Tucked Cotton Material. These shirt bosoms are precisely and more specifically described by the term "wearing apparel composed of cotton or of cotton in chief value made up or manufactured in part" (paragraph 256, tariff act of 1913) than they are by the term "articles made up in part of tuckings of whatever yarns, threads, or filaments composed" (paragraph 358 of that act). The required attributes of wearing apparel most closely describe and identify the goods, and they are dutiable as such under paragraph 256.

T. D. 35392. May 3, 1915. Wool Waste. Crimmins & Pierce et al v. United States. Mohair noils. Reviewing the authorities bearing on the paragraph of the tariff involved, it is clear that the "wool wastes" of paragraph 651, tariff act of 1913, embracing as it does all noils, includes noils of hair from Angora or alpaca goats.

T. D. 35403. May 14, 1915. Drawback on shoe cloth. Drawback on shoe cloth manufactured by Farnsworth, Hoyt & Co., of Boston, Mass., with the use of imported fabrics.

T. D. 35406. May 15, 1915. Drawback on shoe laces. Drawback on shoe laces manufactured by the International Braid Co., of Providence, R. I., with the use of imported artificial silk yarn.

T. D. 35406. May 15, 1915. Drawback on shoe Drawback on bags manufactured by the Bemis Bros. Bag Co., at their factory at Seattle, Wash., from imported twilled burlap.

T. D. 35418. May 13, 1915. Silk Tassels, Ornaments. Silk tassels made in part of cord, which is used in the construction of necessary and essential parts of the tassels and which also holds in the several parts of the tassels together, are, in the absence of proof to show that the articles are definitely, uniformly, and generally known in trade and commerce as "cords and tassels," dutiable as tassels. As silk tassels are not specifically provided for, and the articles are admittedly used as ornaments, they are properly dutiable as silk ornaments at the rate of 60 per cent. ad valorem under paragraph 358, tariff act of 1913. In the matter of protests 730510, etc., of C. Willenborg & Co., against the assessment of duty by the collector of customs at the port of New York.

T. D. 35429. May 24, 1915. Drawback on hosiery. Drawback on hosiery manufactured by Thompson Bros., of Milroy, Pa., with the use of imported artificial silk.

COURT DECISIONS

T. D. 35442. United States Court of Customs Appeals, May 18, 1915. Jute thread waste. United States v. Crompton & Son. "Waste" in paragraph 408, Tariff Act of 1913. Waste under this paragraph must be a waste of bagging, gunny cloth, or similar woven fabric. The waste here is the short broken warp ends of the jute thread used in the manufacture of burlap cloth, and is in fact a thread waste. It falls under the provisions of paragraph 384, tariff act of 1913, as waste not specially provided for.

BOARD CASES

No. 37789. Wool, Paragraph 310, Tariff Act of 1913. Protests 757505, etc., of Dornan Bros., Philadelphia. Wool imported between Oct. 3 and Dec. 1, 1913, was held properly classified under paragraph 370, tariff act of 1909.

Recent Textile Patents

ADHESIVE COATED Fabric, Machine for Treating. 1,137,511. James Meade, Stoughton, Mass.

BOBBIN. 1,136,305. James G. Andrews, Cleveland, O.

BOBBIN-STRIPPER. 1,136,051. Eppa H. Ryon, Waltham, Mass.

BRAIDING MACHINE Carrier. 1,137,490. William H. Joslin, Providence, R. I.

FABRIC, Manufacturing. 1,137,434. Paul F. Vogel, Belleville, Ill.

FABRICS, Process and Apparatus for Treating. 1,137,719. Walter W. Sibson, Philadelphia, Pa.

GARMENT. 1,138,623. John H. Brown, Oneida, N. Y.

HOSE FABRIC. 1,139,467. William T. Cole, Newtown, Conn.

HOSIERY. 1,136,097. Edgar B. Cahn, Far Rockaway, N. Y.

HOSIERY-FRAME, Straight. 1,138,391. Max Michael, Chemnitz, Germany.

HOSIERY, Machine for Attaching Runners to. 1,139,360. Betram P. Hudson, Watertown, Conn.

KNITTED FABRIC. 1,139,342. Frank Clewley, Philadelphia, Pa.

KNITTED FABRIC. 1,139,343. Frank Clewley, Philadelphia, Pa.

KNITTING MACHINE Latch-Opening Mechanism. 1,139,173. William J. Elliott, Philadelphia, Pa.

KNITTING MACHINE, Rib. 1,137,561. L. N. D. Williams, Boston, Mass.

KNITTNG MACHINE Stitch-Changing Mechanism. 1,137,493. David B. Kimes, Spring City, Pa.

KNITTING MACHINE Yarn-Feeding Device. 1,137,527. Robert S. Phillips, Riverside, N. J.

KNITTING MACHINES, Yarn Finger Mechanism for. 1,136,343. Frank E. Jones, Pawtucket, R. I.

KNITTING MACHINE Yarn-Take-Up Mechanism. 1,138,717. Joseph H. Zens, Milwaukee, Wis.

LOOM. 1,139,200. William J. Lutton, Paterson, N. J.

LOOM, Circular. 1,139,073. Matthew R. Rhomoser, Sandy Hook, Conn.

LOOM for Weaving Double Pile Fabrics. 1,137,832. Albert W. Binz, Philadlphia, Pa.

LOOM PICKING Motion, Weaving. 1,138,528. Emil Zipper, Vienna, Austria.

LOOM, Shuttle, Automatically-Threading. 1,138,316. Alonzo E. Rhoades, Hopedale, Mass.

LOOM Shuttle Tension. 1,138,310. Joseph Poisson, Fall River, Mass.

LOOMS, Thread Cutter for the Depleted Weft of Weft-Replenishing. 1,138,272. Eugene H. Ballou, Pawtucket, R. I.

NET, Fabric, Twisted. 1,139,344. Frank Clewley, Philadelphia, Pa.

PILE FABRIC. 1,137,833. Albert W. Binz, Philadelphia, Pa.

SHUTTLE Operating Mechanism. 1,138,418. Guy G. Sands, East Greenville, Pa.

SPINNING and Twisting Machine 1,138,981. Pietro Saracco, Turin, Italy.

SPINNING and Twisting Paper and Other Fibroud Materials. 1,139,333. Thomas A. Boyd, Glasgow, Scotland.

SPINNING Machine Tension Regulator. 1,137,053.

THREAD Board-Cleaning Apparatus. 1,137,305. Howard D. Colman, Rockford, Ill.

TUBULAR FABRIC, Machine for Constructing a Laminated Cohesive Interwound. 1,136,291. Lawrence A. Stubers, Cleveland, O.

UNDERGARMENT, Union. 1,138,982. James C. Scott, Portsmouth, O.

UNDERWEAR. 1,137,659. Rozier D. Oilar, Indianapolis, Ind.

UNION SUIT. 1,137,430. Charles A. Shedaker, Philadelphia, Pa.

UNION SUIT. 1,137,629. La Fayette Johnson, St. Joseph, Mo.

UNION SUIT. 1,138,899. Joseph R. Sheffer, Chicago, Ill.

WARPING MACHINE. 1,138,620 Edward Bloom, Haledon, N J.

WINDING MACHINE. 1,138,320. Claes Ryden, Providence, R. I.

WOVEN TUBE and Weaving the Same. 1,137,405. Victor H. Jennings, Worcester, Mass.

TRADE MARKS RECENTLY FILED FOR REGISTRATION

83,474. Hosiery. Mark: Inez. Owner: S. H. Kress & Co., New York.

83,475. Hosiery. Mark: Trixy. Owner: S. H. Kress & Co., New York.

83,476. Hosiery. Mark: Dolly Varden. Owner: S. H. Kress & Co., New York.

83,477. Hosiery. Mark: Camille. Owner: S. H. Kress & Co., New York.

83,478. Hosiery. Mark: Jupiter. Owner: S. H. Kress & Co., New York.

83,479. Hosiery. Mark: Adonis. Owner: S. H. Kress & Co., New York.

83,480. Hosiery. Mark: Chesterfield. Owner: S. H. Kress & Co., New York.

83,481. Hosiery. Mark: Academy. Owner: S. H. Kress & Co., New York.

83,482. Hosiery. Mark: Rob Roy. Owner: S. H. Kress & Co., New York.

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DIRECT IMPORTERS OF EGYPTIAN COTTON

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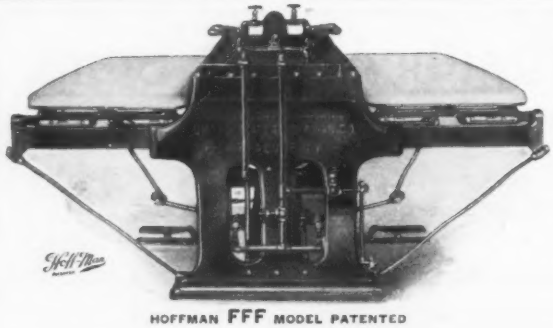

HOFFMAN FFF MODEL PATENTED

Stephenson Underwear Mills of South Bend, Ind., express themselves in part as follows:

"We feel quite willing to express our confidence in your FFF Hoffman Press as we have two in constant use and

The Third just received and partly erected."

The Direct Application of Hot Dry Steam as Applied to Knit Goods by the Hoffman Principle Improves the Appearance

United States Hoffman Co., Syracuse, N. Y.

Buyers' Index

This department is conducted for the benefit of our subscribers. The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under headings to which they are entitled will please notify the publishers.

Absorbent Cotton Wool Machinery.
Tatham, William, Ltd.
Air Moistening System.
——See Humidifying Apparatus.
Albone.
Roessler & Hasslacher Chemical Co.
Architects and Mill Engineers.
Cramer, Stuart W.
Dyer, W. E. S.
Ferguson, John W.
Main, Charles T.
Myrick, J. W. H.
Asbestos Covering.
Johns-Manville Co., H. W.
Asbestos Products.
Johns-Manville Co., H. W.
Asphalt Tanks.
Scaife, W. B., & Sons.
Automatic Feeds for Cotton and Wool.
Leigh & Butler.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Saco-Lowell Shops.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
Smith & Furbush Mch. Co.
Tatham, William, Ltd.
Woonsocket Machine & Press Co.
Back Filling.
International Pulp Co.
Bale Presses.
Saco-Lowell Shops.
Baling Presses.
Boomer & Boschert Press Co.
Philadelphia Drying Mchy. Co.
Smith & Furbush Mch. Co.
Ballers.
Saco-Lowell Shops.
Ball Bearings.
S. K. F. Ball Bearing Co.
Bandings.
Lambeth Rope Corporation.
Sternberg, Fred, & Co.
Baskets.
Diamond State Fibre Co.
Lane, W. T., & Bro.
Standard Fibre Co.
Beamers.
Crompton & Knowles Loom Works.
Bearings.
——See Ball Bearings, Oil-less Bearings and Roller Bearings.
Belting.
Bond, Charles, Co.
Gandy Belting Co.
Graton & Knight Mfg. Co.
Hood, R. H., Co.
Johns-Manville Co., H. W.
Schieren, Chas. A., Co.
Williams, I. B., & Sons.
——See also Mill Supplies.
Belting, Leather.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Belting, Link.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Belt Cement.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Belt Dressing.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Stephenson Mfg. Co.
Belt Lacing, Leather.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Belt Tighteners.
Hunter, James, Machine Co.
Bindings.
——See Tapes and Braids.
Bleaching Kiers.
Birch Bros. (Albert Birch, prop.).
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
New England Tank & Tower Co.
Philadelphia Drying Machinery Co.
Stearns Lumber Co., A. T.
Textile-Finishing Machinery Co.
Bleaching Materials.
Bosson & Lane.
Electro Bleaching Gas Co.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co., The.
Wolf, Jacques & Co.
Worden Chemical Works.
Blowers and Blower Systems.
Autoforce Ventilating System.
Buffalo Forge Co.
Carrier Air Conditioning Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.
Bobbins, Spools, Shuttles, Etc.
American Supply Co.
American Textile Specialty Mchy. Co.
Kunze, Otto.
Leigh & Butler.
Shambow Shuttle Co.
Tebbets, E. L., Spool Co.
Bobbin Winders.
Altemus, J. K.
Lever, Oswald, Co.
Universal Winding Co.
Boilers.
——See Steam Boilers.
Boxes, Box Shooks, Etc.
Diamond State Fibre Co.
Pearson, J. T.
Standard Fibre Co.
Veneer Products Co.
Braiding Machinery.
New England Butt Co.
Textile Machine Works.
Braids.
——See Tapes, Braids and Edgings.
Brass Hinges.
Root, C. J., Co.
Bridges.
Scaife, W. B., & Sons.
Brushers.
——See Napping Machines.
Brushes.
Cocker, M., & Co.
Felton, S. A., & Son Co.
Parks & Woolson Machine Co.
Brushing Machines.
Buhlmann, A. W.
Parks & Woolson Machine Co.
Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.
Button Sewing Machines.
Union Button Sewing Co.
Calico Printers' Machinery and Supplies.
Birch Bros., Somerville Mach. Wks
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Taunton-New Bedford Copper Co.
Textile-Finishing Machinery Co.
——See also Dyeing, Drying, Bleaching, Machinery, etc.
Canvas Baskets.
Lane, W. T., & Bro.
Cap Spindles.
Am. Textile Specialty Mchy. Co.
Carbonizing Machinery.
Birch Bros., Somerville Mach. Wks.
Buhlmann, A. W.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Somerville Mach. Works (Albert Birch, prop.).
Textile-Finishing Machinery Co
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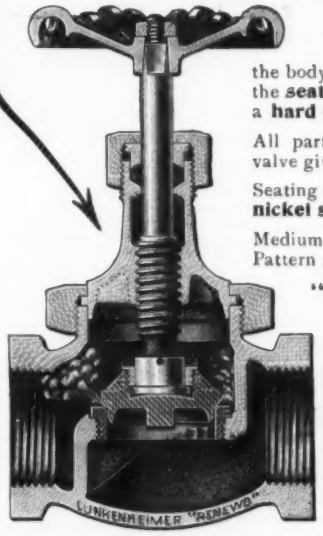

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Each picker in use, is a demonstration of economy

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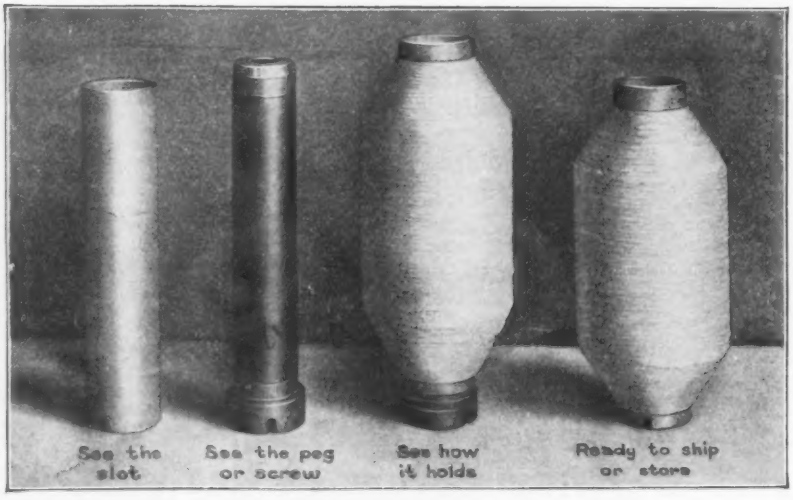

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Publishers' Page

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The Textile World Record is a positive and important factor for the betterment of the textile industry as a whole.

Because Subscribers wish to learn about matters effecting their business processes, devices and equipment for mills, they read the educational, new machinery and process matter that we publish.

Because Advertisers have machinery or supplies that represent progress in textile industries by increasing production or decreasing expenses, or both, they choose to tell the Subscribers about their products knowing that men who buy a publication to read about such things will also buy them when shown that they can be used with profit.

So the triangle of mutual interest is complete—we spend our money to produce the best textile publications possible, both editorially and mechanically, and sell them to Subscribers at less than cost—and much less than their real value to all who make anything like the best use of them.

In these publications we sell space, at a profit, to advertisers, because our Subscribers are just the men who buy the things advertised in our columns.

And these textile machines and supplies that our Advertisers sell to our Subscribers save an expense or make a profit for the Buyer as well as for the Seller.

And so the Lord & Nagle Company's publications make a profit for all concerned in them—Subscribers, Advertisers and Publishers.

Our interests are mutual—so let us "get together" and keep there.

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The 1915 edition of this Directory, "The Red-Covered Book", is now "in press" and will be ready for delivery about June 28th.

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A new feature this year is the list of New York export houses making a specialty of handling knit goods, giving the particular kind of knit goods and the foreign countries with which they do business.

It will also contain a list of British Jobbers and Wholesalers of hosiery and underwear.

In view of the increased demand for American knit goods from abroad these lists should be very useful.

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Although there is hardly a builder of textile machinery or equipment; or a manufacturer of mill supplies of any prominence, who does not advertise in the Textile World Record, it may be that you, in going over the advertising pages, or the Buyers' Index, for some particular article, may not find therein just what you are looking for. If what you want is in the textile machinery equipment or supply line, we can in all probability tell you just where to get it, and are ready to be of assistance to our subscribers in this and all other matters pertaining to the textile industry.

Monthly Circulation Statement

Of this edition over 6,200 copies are printed and all are needed.

The Textile World Record is a Member of the Audit Bureau of Circulations.

(Continued on Page 161)

Change of Address

Subscribers are requested to notify us in writing before the 5th of the month of any change of address desired, as that is the date on which our mailing lists close for the current month. If we do not receive notice of the change until after the 5th, that month's issue will go to the old address and may require postage for reforwarding.

It sometimes happens that because a news item has been published to the effect that he has moved from one mill to another, a subscriber thinks that his address will be changed automatically without any instructions from him and he will sometimes write to the effect that we knew he had moved because we had published an item about it and he does not see why his magazine was not sent to his new address. He forgets that the subscription department is entirely separate from the news department and has 6,000 names to look after and can hardly be expected to search the news columns for possible changes of address, and even if it did, it would not be proper to make changes unless ordered or authorized by the subscriber.

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—÷—

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—÷—

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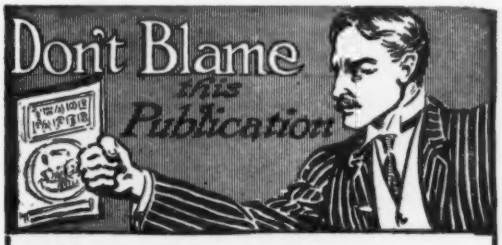

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This is a special department for those who wish to buy or sell second hand machinery, mills or mill sites, patents, etc., and for such advertisements as "Help" or "Situations Wanted." A special low rate is charged, viz., $1.00 for one-half inch, single column; $2.00 for one inch, single column, and in the same proportion for larger space. By measuring these advertisements and counting the words you will see what space is needed for your announcement. No advertisement accepted for less than $1.00. Remittance should accompany the order. No extra charge for forwarding replies sent in care of the Textile World Record.

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FOR SALE A Latest Improved Steel "Hurricane" Underwear Dryer. 6 Section. In good running condition. Good as new. For further particulars address, "Hurricane," care of Textile World Record, Boston, Mass.

WANTED Man to take entire charge of plant making high grade underwear in middle western city. Exceptional opportunity for right man. State experience and general qualifications.
Address, D-6 15, Textile World Record, Boston, Mass.

FOR SALE Crompton & Knowles Ribbon Looms equipped for making 60 ligne goods also a 64 Spindle New Eastwood Silk Winder with variable speed attachment and extra attachment for cone winding. Address "B-6-15," Textile World Record, Boston.

WANTED Position as foreman, or as Knitter and Fixer in small ladies knit underwear mill. Can produce from one to two more shirts from each knitting machine every day than has ever been done before according to yarn used. Would like to get connected with a manufacturer who owns his mill himself with a view of becoming a partner later on. Good sewing machine fixer. 35 years old. Married. Good references. Address "Knitter and Fixer," care Textile World Record, Boston, Mass.

Textile Chemist and Purchasing Agent desires change of position. Graduate of Mass. Inst. of Technology. Experienced in Cotton, Worsted and Silk. Address "I-6-15," Textile World Record, Boston, Mass.

Designer Wants Position

Styler or Assistant Styler. Designer of several years' experience and acquaintance with all the departments of a concern manufacturing dress goods and men's wear desires position as Styler or Assistant Styler. Address "G-6 15," Textile World Record, Boston, Mass.

WANTED
Selling Agency

For Gingham and Dress Goods Mill.
Address "C-6-15," Textile World Record,
120 Liberty Street, New York

A Rare Opportunity

for live manufacturer of Ladies' Knit Underwear to secure services of progressive young man. Many years' experience in selling and actual manufacturing (as executive). Do not reply unless you mean business. Address "H-6-15," Textile World Record, Boston, Mass

HARDING & FANCOURT, Inc.
Kensington Soap Works
Soaps of Quality, Turkey Red Oil, Tuscan Softener
Soluble Oils and Olive Oil
516-18 So. Delaware Ave. PHILADELPHIA

Pile Fabric Mill Wanted

Successful sales manager and styler desires to buy an interest in progressive Pile Fabric Mill, where capital, experience and energy can be profitably used. Address "E-6 15," Textile World Record, Boston

Experienced Dyer Wanted

Wanted: By one of the largest hosiery mills in the United States, an experienced dyer on silk and cotton goods. Must be experienced in color matching and able to match any shade in silk hose with cotton tops. An excellent opportunity for the right man. Must thoroughly understand color theory and must be familiar with all classes of dyes. State previous experience and give references. Address, "K-6-15," Textile World Record, Boston, Mass.

Position Wanted in Woolen or Worsted Mill

Designer or Assistant Superintendent in woolen and worsted mill. Has worked on woolen and worsted suitings, serges, piece dyes, naturals, cross dye fancies, dress goods and worsted men's wear, both medium and high grade. 27 years of age. Will not go to Canada. Address "F-6 15," Textile World Record, Boston, Mass.

Calender Wanted

Wanted a Calender Machine for calendering Tapes and Narrow Fabrics. Address C. T. N., Textile World Record, Boston, Mass.

Manager Wanted

A high-class and quickly-developing industrial enterprise near Toronto wants a Manager. One who has had experience in manufacturing and mercantile lines and has had a successful record, and who has not less than $10,000 to invest. This is an excellent opportunity for some man with executive and managerial ability. The Company's books will be thrown open to any bona fide applicant and every opportunity for investigation afforded. In the first instance address "A-6-15," Textile World Record, Boston.

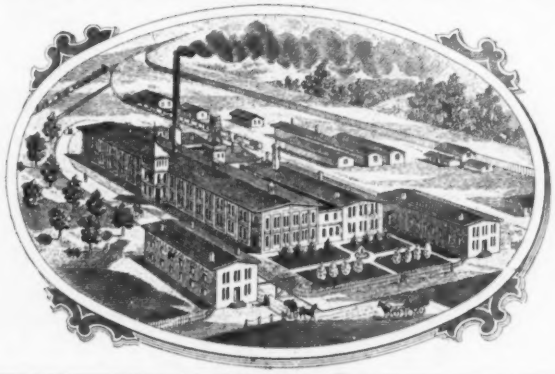
Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared. Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c. Textile World Record, Boston.

FOR SALE
2 PHILLIPS SLASHER CANS
Heavy Copper 50" face, 48" diam., with 112 tooth driving gear and journals on head. Will pay you to investigate as used only one month and will be sold cheap to close out. MOUNT HOPE FINISHING CO.
North Dighton, Mass.

FACTORY for SALE or RENT
70,000 sq. ft. floor space (will divide) 1 and 3 story heavy constructed brick buildings, sprinkled, high ceilings, excellent light, 3 street fronts, large yard. Located in Phila., 12 minutes from City Hall, adjoining Freight Station, in the centre of labor district. Liberal terms. Write to
J. ALAN MIDDLETON,
Factory Specialist and Engineer,
Suite 516 Stock Exchange Bldg., Philadelphia, Pa.

This Complete Textile Plant Fully Equipped FOR SALE



This is the Famous Buell Mills located at St. Joseph, Mo., in the heart of a quality wool country. Cover fifteen acres of ground, 70,000 Sq. Ft. Floor space, six trunk line railroads. Complete modern equipment for blankets, robes, flannels, carriage or auto cloth, plain cashmeres, fume bags, etc.

At Less Than 1/4 Original Cost

Past sales high as $450,000 per year. Ready for prompt operation. Immediate possession. A bargain of bargains. Terms to suit Responsible Parties.

Inquiries from Interested Parties Solicited.

Address, H. E. MOOERS, Industrial Commissioner, Commerce Club, St. Joseph, Mo.

The Logical Place
To Advertise Second-Hand Machinery

The Textile World Record carries more advertising of textile machinery, equipment and supplies than any other textile periodical. Very many of its 400 advertisers use no other.

The reason for its continued success as an advertising medium for the sale of textile machinery is that:

Its subscribers buy about $250,000,000 worth of textile machinery, equipment, and supplies (not including raw material) each year.

Being so successful for new machinery it should also prove profitable for the advertising of second-hand machinery, and for the sale of anything of special interest to men in the mill who are held responsible for results, e. g., mills, power-plant equipment, supplies, etc.

Therefore, if you have any textile machinery, mill or power-plant equipment that you do not intend to use again, the Textile World Record offers you the best market for its disposal at a fair price. An advertisement this size costs only $16.00 an issue. For further information address:

Classified Advertising Department

Textile World Record 144 Congress Street Boston, Mass.

Situations Wanted

Manufacturers who are in need of Superintendents or overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World Record, 144 Congress Street, Boston, who will give prompt attention to their requirements without charge.

Overseer of Finishing in knitting mill; would consider position in charge of sewing machines; has worked on cotton, wool and silk knit goods; familiar with Singer, Merrow, Union Special, Metropolitan, Wilcox & Gibbs, Union Button and other sewing machines; 32 years of age, married; good reference.
6449, Textile World Record, Boston, Mass.

Master Mechanic; has had a wide experience; 50 years of age, married; good reference.
6450, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on all kinds of dobby work, lenos, jacquards, box work; in fact is well up on all kinds of fancy work on cotton, worsted, silk, etc.; familiar with Crompton, Knowles, Draper, Lewiston, Lowell, Whitin and Mason looms; also all kinds of dobbies and jacquards; 37 years of age, married; will not go to Pa., N. Y., N. J. or West; good reference.
6451, Textile World Record, Boston, Mass.

Designer and Assistant Superintendent in cotton mill; has worked on ginghams, novelty dress goods, etc., also cotton yarn spinning; familiar with Fairmount, Crompton & Knowles looms; Whitin frames; warp dyeing, long chain and quilling machinery; 28 years of age, married; will not go West or to Canada; good reference.
6452, Textile World Record, Boston, Mass.

Assistant Superintendent in cotton mill; has worked on cotton duck, bag cloth, sheetings, grain bags, shirtings, dress goods, awnings, tickings, lenos, curtains, etc.; familiar with Draper, Whitin, Saco, Lowell, Mason, Fales & Jenks, Entwistle, Stafford, Woonsocket, Crompton & Knowles, Mason, Universal winding, Potter & Johnson, etc.; 27 years of age; will not go West, South or to Canada; good reference.
6453, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill or would consider position as overseer of cutting in cotton mill making garments; has worked on cotton and knit goods; will not go to Pa., N. J., West, South or Canada; 30 years of age; good reference.
6454, Textile World Record, Boston, Mass.

Overseer of Dressing in woolen mill, or second-hand; has worked on medium and fine woolen and cotton mixes and worsteds; fancies in both classes; familiar with Davis & Furber and Cleveland dressing frames; 43 years of age, married; will not go to Pa., N. J., West, South or to Canada; good reference.
6455, Textile World Record, Boston, Mass.

Overseer of Dyeing; has worked on piece dyes and worsted yarns; familiar with Klauder-Weldon and Rodney Hunt dyeing machines; 39 years of age, married; will not go West, South or to Canada; good reference.
6456, Textile World Record, Boston, Mass.

Overseer of Carding in woolen mill; has worked on all sizes of yarns and all kinds of stock; familiar with Davis & Furber machines; 47 years of age, married; good reference.
6457, Textile World Record, Boston, Mass.

Superintendent of Knitting; would consider position as foreman of knitting or finishing; worked on all kinds of ladies', misses', men's and boy's underwear, union suits and sweaters; familiar with all kinds of spring needle machines; Cooper spring needle rib machines and all kinds of latch needle underwear machines; 45 years of age, married; good reference.
6458, Textile World Record, Boston, Mass.

Master Mechanic in cotton mill; would consider position as superintendent or assistant superintendent; has worked on ginghams, table damask, flannels, quilts, yarns from 5s to 50s; familiar with practically all machines used in a cotton mill; 30 years of age; has had charge of boilers, generators and general electric equipment, construction work as well as repair departments; can handle mill engineering work and drafting; good reference.
6459, Textile World Record, Boston, Mass.

Superintendent of knitting mill; might consider position as boss finisher or boss knitter; has worked on men's and ladies' underwear, sweaters and toques; familiar with Scott & Williams, Wildman, Stafford & Holt, Tompkins, Lamb, Nye & Tredick and all makes of sewing machines; 47 years of age, married; will not go South; good reference.
6460, Textile World Record, Boston, Mass.

Foreman or cutter in knitting mill; has worked on merino and mercerized underwear; familiar with flat lock knitting machines; 24 years of age; good reference.
6461, Textile World Record, Boston, Mass.

Overseer of Cloth Room; has worked on drills, twills, sateens, bag stock, grain bags, duck, sheetings, several kinds of rubber goods, auto tops, brown crashes, U. S. Marine corps olive, drab and khaki goods; familiar with Curtis & Marble, Elliott & Hall, Union Special and Singer sewing machines; Bushness presses, also hydraulic presses; 25 years of age; will not go South; good reference.
6462, Textile World Record, Boston, Mass.

Overseer of Knitting; has worked on wool, worsted, plaited, cotton, artificial silk and pure silk hosiery; familiar with Acme, Banner, Scott & Williams, George D. Mayo, Wildman, Brinton ribbers; German, Wright, Hepworth and Beattie loopers; 31 years of age, married; good reference.
6463, Textile World Record, Boston, Mass.

Machinist in underwear mill on sewing or knitting machines; has worked on light weight ladies' underwear and children's drop seats; familiar with Nye & Tredick, Scott & Williams, Merrow, overseam, Wildman, Union Special lacers, Singer button and button hole and German machines; 22 years of age, married; good reference.
6464, Textile World Record, Boston, Mass.

Assistant Superintendent of woolen mill; has worked on cap goods, fancy and heavy weight cassimeres, automobile cloakings, upholstery cloth, covert cloth and venetians; familiar with Davis and Furber cards, mules and dressing frames; Crompton & Knowles broad and fancy worsted looms; 25 years of age; will not go to Vt., West, South or Canada; good reference.
6465, Textile World Record, Boston, Mass.

Private Secretary or assistant to agent or general superintendent of a cotton mill; has also had experience as superintendent; 28 years of age, married; will not go West or South; good reference.
6466, Textile World Record, Boston, Mass.

Superintendent, designer, assistant superintendent or designer in woolen mill; has worked on all grades of goods, men's wear and ladies' wear from low manipulated goods up to fine fancy worsteds and woolens; familiar with all woolen and some cotton, worsted and silk machinery; 46 years of age, married; good reference.
6467, Textile World Record, Boston, Mass.

Overseer of Knitting or superintendent; has worked on sweater coats, gloves, toques, caps, hosiery, Scotch gloves, Shaker coats, jerseys, etc.; familiar with glove hand machines, Grieves & Hose machines, Dubied, Grosser, Lamb, Stafford & Holt, Brinton, Acme and other machines; 22 years of age; will not go South; good reference.
6468, Textile World Record, Boston, Mass.

Overseer of Ring Spinning, spooling, etc.; has worked on both carded and combed filling from 4.80s to 98s and warps from 4s to 65s; familiar with spinning frames, spoolers, cone winders, warpers and slashers; 29 years of age; will not go South; good reference.
6469, Textile World Record, Boston, Mass.

Overseer of Spinning or drawing, doubling, twisting, winding and spooling; has worked on mohair, alpaca, botany and domestic wools; familiar with Prince & Smith, Saco, Lowell, Hall & Stell, Colinson, fly, cap, ring spinning or twisting machinery; 35 years of age, married; good reference.
6470, Textile World Record, Boston, Mass.

Superintendent of hosiery mill; has worked on lisle, silk, cotton, silk and wool, mercerized and cashmere hosiery; has a knowledge of Scott & Williams, Jenckes, Banner, Spiers, Grieves and other machines, but is not a fixer; 28 years of age, married; good reference.
6471, Textile World Record, Boston, Mass.

Overseer of Carding and spinning or overseer of carding; has worked on wool and cotton shoddy mixes; all kinds of uniform cloth and blankets for the U. S. government; familiar with Smith & Furbush cards; Platt and Furbush mules; 44 years of age, married; will not go to Me., N. H., Vt., or Canada; good reference.
6472, Textile World Record, Boston, Mass.

Superintendent and designer in woolen mill; has worked on woolens, worsteds, kerseys, meltons, broad cloths, thibets, whip cords, coverts, venetians, ladies' cloakings, overcoatings for men's wear, also khaki goods; 50 years of age, married; will not go to Pa., N. Y., N. J., West, South or Canada; good reference.
6473, Textile World Record, Boston, Mass.

Overseer of Carding or spinning in woolen mill; has worked on woolens, mixes, men's wear, fine and coarse work, knitting yarn or silk noil yarn, also shoddy goods or cotton on woolen system; familiar with D. and F. and J. & B. English mules, also all makes of woolen cards, cone winders and twisters; 40 years of age, married; good reference.
6474, Textile World Record, Boston, Mass.

Superintendent or agent of woolen mill; has worked on wool and worsted men's and women's wear; 42 years of age, married; will not go West, South or to Canada; good reference.
6475, Textile World Record, Boston, Mass.

Overseer of Warp Knitting or second hand; has worked on about all kinds of goods made on a warp knitting machine—lambskins, white and colored sheepskins, chinchillas, fancies and open work; familiar with Rachel machines, double rib, special warp knitting with a cross thread running; 23 years of age; will not go to Me., N. H., Vt., Pa., West, South or to Canada; good reference.
6476, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on sheetings, pillow tubings, flannels, twills, sateens, coutills, marquisettes, ducks, plain and striped ginghams, Turkish towels and lawns; familiar with Draper and automatic looms; 45 years of age, married; will not go to Pa., N. Y., N. J., West, South or to Canada; good reference.
6477, Textile World Record, Boston, Mass.

Belt Maker and roll coverer in cotton mill; has made new leather belts, cotton or rubber belting; has repaired, put on, etc.; familiar with sheepskin, calfskin and coatskin in roll covering line; familiar with Turner and Dennis leather machinery; 29 years of age, married; will not go to Pa., N. Y., N. J., West, South or to Canada; good reference.
6478, Textile World Record, Boston, Mass.

Superintendent, assistant superintendent or designer; has worked on woolens, worsteds, unions, men's and women's wear; 44 years of age, married; good reference.
6479, Textile World Record, Boston, Mass.

Designer or assistant superintendent or assistant in woolen mill; has worked on woolen and worsted suitings, overcoatings, gabardines, piece dyes and dress goods; 26 years of age; will not go West or South; good reference.
6240, Textile World Record, Boston, Mass.

Master Mechanic; is experienced on cotton felt, knitting and woolen machinery; thoroughly familiar with steam power, electricity, water power, piping, carpentering, tool-making and general repairing; 35 years of age, married; will not go to Pa., N. J., West or South; good reference.
6241, Textile World Record, Boston, Mass.

Designer or assistant designer in woolen or worsted mill; has worked on woolen and worsted men's and women's wear; 30 years of age; good reference.
6284, Textile World Record, Boston, Mass.

Assistant Superintendent in cotton mill; would consider position as overseer of carding, spinning, warping and slashing; familiar with American and foreign makes of cotton machinery; graduate of a textile school; 27 years of age; good reference.
6263, Textile World Record, Boston, Mass.

Fixer or Foreman of Knitting in hosiery mill; has worked on wool, worsted, cotton, mercerized, pure and artificial silk, in fact all styles; familiar with Scott & Williams, Banner, Standard, Geo. D. Mayo, Acme, Brinton and Wildman knitting machines, also ribbers and loopers; 26 years of age; good reference.
6264, Textile World Record, Boston, Mass.

Wool or Worsted Designer; would consider position as assistant superintendent or general assistant; has worked on woolen and worsted men's wear, ladies' dress goods, beavers, meltons, chinchillas, mackinaws, piece dyes, army and navy serges, tunics, steamer rugs, cashmerettes, etc.; familiar with all makes of machinery; 24 years of age; good reference.
6265, Textile World Record, Boston, Mass.

Sewing Machine Fixer; would consider position as overseer of finishing and machine fixer in small mill; familiar with all American makes of machinery; 40 years of age; good reference; will not go to Mass., R. I., Conn., Me., N. H., Vt. and N. J.
6266, Textile World Record, Boston, Mass.

Fixer or Foreman in hosiery mill; has worked on mercerized, cotton and silk; familiar with Acme, Mayo, Jenckes, Wildman, Brinton ribbers; Hepworth and Record loopers and Union Special and Merrow sewing machines; 24 years of age; good reference.
6267, Textile World Record, Boston, Mass.

Superintendent of cotton mill; would consider good paying position as overseer of ring spinning; has worked on white and colored yarns, 3s to 60s; familiar with Saco & Pettee, Lowell and Draper twisters; 42 years of age, married; will not go to Conn., Pa., N. Y., N. J., West, South or to Canada; good reference.
6268, Textile World Record, Boston, Mass.

Overseer of Dyeing in woolen mill; has worked on all kinds of dress goods, men's wear, serges, unions, rain proofed cloths, mohairs, linings, slubbing, raw stock and yarns; familiar with all kinds of dyeing machinery; 37 years of age; married; good reference.
6269, Textile World Record, Boston, Mass.

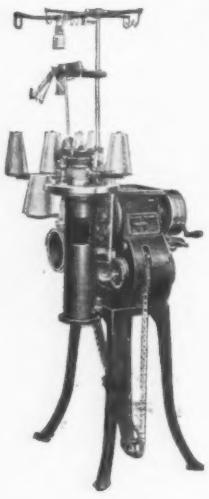
Overseer of Dyeing in woolen mill; has worked on piece dyes, raw stock, wool and silk noils, worsted yarn, silk resist, developed cotton and some direct cotton; familiar with all makes of dyeing and drying machinery; 30 years of age; married; will not go to Pa., West, South or to Canada; good reference.
6270, Textile World Record, Boston, Mass.

Overseer of Knitting; has worked on ladies' and men's underwear from latch and spring needles; sweaters from power machines and jerseys, bathing suits, Swiss and Richelieu ribbed goods; familiar with Scott & Williams and other latch needle machines; Tompkins and other spring needle machines; 38 years of age, married; will not go West or South; good reference.
6372, Textile World Record, Boston, Mass.

Boss Carder in woolen mill; has worked on wool and shoddy; familiar with any make of cards; 46 years of age; good reference.
6373, Textile World Record, Boston, Mass.

Superintendent, manager, purchasing agent, secretary or treasurer of knitting mill; has worked on ladies' ribbed underwear, sweaters, hosiery, cotton yarn, ring and mule, 84-176 needle hosiery; familiar with McMichael & Wildman, Scott & Williams, Standard, Banner, Geo. D. Mayo, Schneider & Fisher machines; 34 years of age; has had years of experience in purchasing; good reference.
6374, Textile World Record, Boston, Mass.

Why Not Have Your Plant Flexible?



It is no longer necessary to buy hosiery machines of special diameter that can be used for only one class of goods.

By installing our Model G machines you can make all sizes of men's, women's, children's and infants' stockings upon the same machine and without the use of ribbers.

ESTABLISHED 1865

SCOTT & WILLIAMS, INC.

NEW YORK **88 Pearl Street, Boston** UTICA

KNIT.

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New Mills.

Canada, Ontario, Brampton. John McMurchy, proprietor of the Huttonville (Ont.) Woolen Mills, is operating a new plant in Brampton under the name of John McMurchy & Sons, with 3 sets of cards and 21 knitting machines on men's half hose. Later it is possible that the manufacture of underwear will be added. While this firm is closely connected with John McMurchy, of Huttonville, it is conducted as an entirely independent enterprise. John McMurchy and H. L. McMurchy are the buyers.

*Georgia, Gainesville. The new Merck-Hetrick Mfg. Company will start manufacturing about June 1 with 25 knitters, and as soon as help can be trained they expect to add more machines. A building has been rented and machinery will be set up as soon as secured. Some equipment has been purchased, but they are interested in further information on necessary winding and knitting equipment. This project has no connection with the Gainesville Hosiery Mill project of A. C. Meldrum. B. H. Merck is president, treasurer and buyer of the concern; W. F. Hetrick is the superintendent and Hinchman, Vezin & Co., N. Y., will sell the product. Electric power will be used. B. H. Merck is a local wholesale grocer and owns the building in which quarters have been taken. He states that the overhead expenses will be very low, that a competent superintendent has been secured, and with the selling arrangements made the concern ought to grow rapidly.

*Pennsylvania, McAdoo. Construction work will be started on a building for the new McAdoo Knitting Mill about June 1 and it is expected that manufacturing will be started about October 1 with 10 knitting and 8 sewing machines on women's and children's knit underwear. Electric power will be used. W. F. Miller will be president and buyer and W. Russell Miller will be superintendent. The production will be sold through Jonas B. Robitscher, N. Y.

New Jersey, Camden. William F. Taubel, Inc., of Riverside, has purchased a lot of land at 8th and Spruce Sts., on which a hosiery mill will be erected which will give employment to from 300 to 500 hands. Plans for the building are now being prepared and construction work will be started in less than a month. It has been noted recently that the Taubel Company is establishing branches in Trenton, N. J., Lebanon and Reading, Pa. As noted in another part of this issue, machinery is now being set up in the new branch at Lebanon, Pa.

*New York, Ellicottville. Work has been started on the new mill for the Lander & Watson Hosiery Company, which is to move here during the summer from Perry, N. Y. The new building will be constructed of brick, 2 stories high, with separate boiler and engine room.

*New York, Utica. The Ross-Hogan Knitting Corp. will manufacture with 14 knitting machines and 24 sewing machines, making boys' and misses' union suits, and men's bathing suits in a building at 411 Main St. The organization of this company with capital stock of $10,000 was recently noted. Charles Ross is president and buyer and Morgan M. Hogan, superintendent of the Avalon Knitwear Company's plant for fifteen years, is treasurer and manager.

*North Carolina Coats. Equipment being installed in the plant of the new Coats Hosiery Mills includes 41 knitting machines, 9 ribbers, 5 loopers, sewing machines, press, etc. At first the production will consist mostly of half hose from 14s to 18s yarns. The capital stock of this company is $10,000, of which $7,500 has been paid in. E. M. Henley, of Duke, is president; N. T. Patterson, of Coats, is treasurer and buyer, and W. G. Watkins is superintendent.

Pennsylvania, Lansdale. Jacob T. Kriebel is operating a small hosiery knitting plant at the rear of 131 Green St., with 2 knitters, 1 looper, and an electric press, making men's half hose in cotton, mercerized and silk, also men's heavy wool half hose. Various numbers of black and white cotton yarn, mercerized yarn and woolen yarn and a small amount of silk yarn are purchased. Nelson C. Kriebel is manager and buyer.

*Pennsylvania, Philadelphia. The Full Size Hosiery Company, recently reported by us as starting a plant for the manufacture of women's seamless cotton and mercerized hosiery at the N. W. corner of 10th and Diamond Sts., have equipped their plant with 22 latch needle knitters, 1 looper and 1 welter on which they are making a line of 176 to 208 needle goods, using electricity as the motive power and buying 20, 28 and 40 cotton yarn. The owners of the plant are Brown & Vickerman. Harry Wister, Jr., is superintendent.

*Pennsylvania, Pleasant Gap. The Millheim Knitting & Mfg. Company, of Millheim, Pa., has established a branch knitting plant with 50 latch needle knitting machines, 6 loopers and 10 ribbers, at Pleasant Gap. Electric power is used. It was previously reported this branch would be located at Pleasant Grove.

Pennsylvania, Reading. The Consumers Direct Mills is the name of a new concern manufacturing seamless cotton and mercerized hosiery and half hose in a building on Gilbert St. Eight knitting machines and 3 loopers have been installed and are operated by electric power. The product is sold direct. Robert McCain is buyer. 1/26s to 2/60s yarns are used.

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Enlargements and Improvements.

Canada, Ontario, Woodstock. New finishing and drying machinery is being installed in the plant of the Oxford Knitting Company, Ltd.

Massachusetts, East Douglas. The Tally-Ho Knitting Company has installed some new equipment and is making new lines of knitted goods.

Newfoundland, St. Johns. The Newfoundland Knitting Mills, Ltd., are installing new machinery for knitting men's heavy woolen hose. Heretofore this concern has manufactured underwear.

REMITTANCES TO TREASURER. BOX 381, BOSTON, MASS.

WM. M. WOOD, PRESIDENT
SHAWMUT BANK BUILDING, BOSTON
POST OFFICE BOX 381.

JOHN W. BURROWS
SELLING AGENT
FOURTH AVENUE, AT EIGHTEENTH STREET
P.O. BOX 100, STATION D, NEW YORK

ASST. SELLING AGENTS
ROGER N. ARMS
MARTIN G. LANGENAU

American Woolen Company
OF NEW YORK

CABLE ADDRESS
"WOLENCO NEW YORK"
GENERAL TELEGRAPH CODE USED

New York, May 15, 1915.

IN YOUR REPLY PLEASE REFER TO EJP DEPT. Exam.

TO WHOM IT MAY CONCERN:

We have used at this office for some time the hand cloth tester manufactured by Henry L. Scott & Co. of Providence, R. I. and heartily recommend it to anyone needing a testing machine.

AMERICAN WOOLEN CO. OF N.Y.

Edward J. Price
Adjuster.

MDV

ONE of the many testimonials received from hundreds of satisfied customers among whom are the United States, French and Belgian Governments.

We are prepared to furnish machines that will make tests on both United States and foreign standards. Metric clamps and dials reading in kilograms furnished when desired.

Send for Catalog

Henry L. Scott & Company, Providence, R. I.

*New Hampshire, Berlin. The machinery of the Berlin Knitting Company, J. Wallace, proprietor, was moved from Bangor, Me., to the building at Mechanic and Pleasant Sts., Berlin, N. H., last week, and is being set up in the new quarters. Men's, women's and children's sweaters are the principal product of this concern. There is a possibility that the business will be incorporated and enlarged.

North Carolina, Newton. More machinery is being installed in the plant of the Ridgeview Hosiery Mill Company, manufacturers of men's and women's seamless hosiery. J. A. Gaither is treasurer and buyer.

*North Carolina, Zebulon. The $20,000 new preferred stock of the Zebulon Hosiery Mills will be issued about the middle of the month and will be taken up in large part by the present stockholders. Half of the amount realized will be used to purchase machinery and the other half will be used for working capital. An addition is to be built to the dye house and a bleaching plant installed. Men's and women's hosiery is manufactured. T. J. Horton is president and treasurer and W. C. Wakefield is secretary.

*Ohio, Cleveland. Two new knitting machines have been added to the equipment of the Elbel Knitting Works, a small sweater coat and novelty concern, which recently moved from 2033 W. 52nd St. to larger quarters at 6708 Lorrain Ave.

*Pennsylvania, Manheim. Walter W. Moyer, of Ephrata, is treasurer of the new Manheim Underwear Company, the new concern organized to take over and start up the plant of the Manheim Knitting Mills. S. D. Bausher, of Hamburg, and J. B. Lesher, of Williamstown, are interested in the new company. These men are all successful manufacturers and the future of the new concern would seem to be secure. It has been reported that the building would be enlarged and the present machinery overhauled and some new equipment installed.

Pennsylvania, Philadelphia. A one story frame building, 40 by 60 feet, is to be erected as an addition to the buildings of the Concordia Silk Hosiery Co., Inc., located at Fishers Lane and Wyoming Ave., where they are manufacturing a line of full fashioned hosiery on 22 full fashion frames, the production being sold through New York.

Pennsylvania, Philadelphia. The Pigeon Knitting Co. have removed their plant from 746 E. Westmoreland St. to 4715 Edgemont St., Bridesburg, where they are now operating 12 spring needle knitting machines, 2 loopers and one sewing machine on women's seamless 222 to 240-needle cotton and mercerized hosiery, the production being sold through Pigeon Bros., 1211 Arch St

Pennsylvania, Philadelphia. The American Standard Knitting Mills, of which Brodnick Brothers are the proprietors, located at 1545 S. 7th St., where they are manufacturing a line of sweaters and bathing suits and fancy knit goods, are arranging for the opening up of a branch plant in another section of the city, their present quarters being too small for their increasing business.

*Pennsylvania, Pottstown. Work has been started on the foundation for the large new addition to the local plant of the Century Knitting Company. The main office and mill is at Spring City. Ladies' and children's ribbed underwear will be manufactured in the new addition.

Pennsylvania, Reading. Harry Hahn, a manufacturer of hosiery, at 132 Orange St., has ordered 25 more knitting machines, which will be installed as soon as possible. There was a current report that the manufacture of underwear would be added, but this is incorrect. The new machinery is to manufacture men's, women's, children's and infants' hosiery.

Pennsylvania, Reading. Work is being started on the construction of an additional story on the plant of the Heff-Worth Knitting Mill, West Reading.

*Virginia, Norfolk. Arrangements have not been made for the new latch needle knitting machines which it is proposed to install in the plant of the Norfolk Knitting Mills Corp. Probably about 20 machines will be added, but the date for this new installation has not been decided upon. No further additions or improvements are contemplated.

.....

Mills Starting Up.

*Pennsylvania, Lebanon. Machinery equipment is arriving for the new hosiery knitting plant of W. F. Taubel, Inc., of Riverside, and is being set up in the extension built by the Central Market House Company at 9th and Scull Sts. About 150 people will be employed here. The main plant is at Riverside, N. J., and branches are operated at Tamaqua, Shamokin, Mt. Carmel and Philadelphia, Pa.

*Pennsylvania, Manheim. Manufacturing has been started by the Manheim Underwear Company, the new concern organized to take over and start up the idle Manheim Knitting Mills. Ladies' and children's carded, combed and lisle ribbed vests and union suits are being manufactured on 16 knitting machines and 20 sewing machines. The capital stock is $10,000. S. D. Bausher, of Hamburg, is president; W. W. Moyer, of Ephrata, is treasurer and buyer, and John B. Lesher, of Williamstown, is secretary. Condit & Arnold will sell the product. The main office is at Ephrata, Pa., and all buying is done there.

*Pennsylvania, Reading. The new branch plant of Wm. F. Taubel, Inc., is nearly ready to begin manufacturing. It will start with about 100 hands. This is a branch of the main plant at Riverside, N. J.

*Tennessee, Newport. Manufacturing has been started in the small fifteen-machine hosiery plant established here by J. W. Kyker. Coarse yarns in black and white, blue and white, and plain white will be bought.

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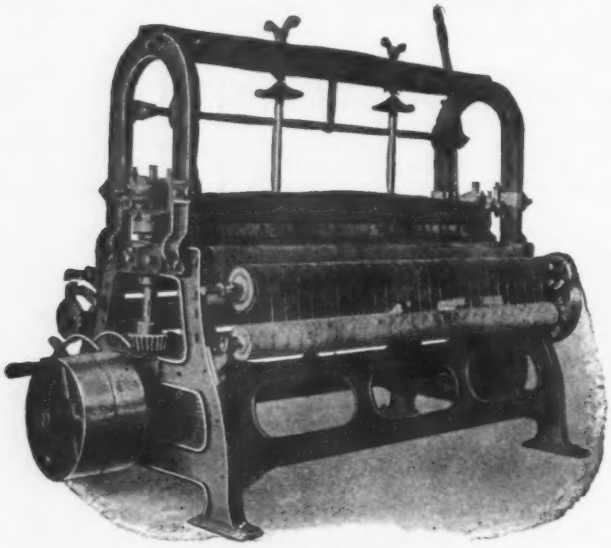
Mills Shutting Down.

Iowa, Atlantic. It is reported that the plant of the Atlantic Knitting Company is idle and is being offered for sale. Sweater coats and fancy knit goods were manufactured on 15 knitting and 30 sewing machines.

CHINCHILLA MACHINE



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MISCELLANEOUS.

.....

Louisiana, New Orleans. Mente & Co., manufacturers of burlaps and bags, are installing 10 new sets of cards, also cop winders and looms. This will make 12 sets of cards in the plant. Later on a further installation of 12 more sets of cards is contemplated. Mente & Company are interested in the Maginnis Cotton Mills of New Orleans.

Massachusetts, Boston. Reports have been given recently of a project to establish a braid mill in Lynn, headed by Earl F. Stanton, of Providence. Progress is being made on the project and a charter has been secured with capital stock of $30,000 under the name of the Era Narrow Fabric Company. Owing to a lack of interest in Lynn the plant will probably not be established there. The promoters are negotiating with the Industrial Department of the New Haven Railroad regarding a location in Massachusetts, but if nothing comes of these negotiations the plant will be located in Providence. The incorporators are Earl F. Stanton, president; Robert L. Stanton, 209 Washington St., treasurer; George W. Rimmer, clerk. Robert L. Stanton is manager of the Clayton Specialty Company at 209 Washington St., Boston. Earl F. Stanton is a mechanical engineer and is the son of Robert L. Stanton. If the plant is established braids will be manufactured.

*Massachusetts, Fall River. The addition being built by the Stevens Mfg. Company is a brick storehouse, 68 by 150 feet, two stories, in two sections, for the storage of finished goods.

Massachusetts, Rockland. Another small addition will be built by the Rockland Webbing Company to be used for storage purposes. Recently a new plant was built at the corner of Park and Howard Sts.

Massachusetts, Worcester. The Mills Woven Cartridge Belt Company is building an addition to its plant on account of increased business. The enlargement will cost about $12,000, and will be 60 by 28 feet, 3 stories high. Work has been started on the foundation.

*New Hampshire, Milford. Linen canvas used by tailors will be manufactured in the linen mill here by Maurice A. Goldman, of Mackintire, Lawrie & Co., Boston. T. S. Morrow, formerly employed by the Phoenix Linen Company at North Brookfield, Mass., will be in charge of the plant. Fancy linen goods, such as damasks, were manufactured in the mill up to a year ago by the Summers Linen Company, of Port Huron, Mich., and much of the equipment is unsuited to the production of coarse linen canvas. The weaving department is being overhauled and some of the narrow looms will be taken out and replaced with wider looms. A new boiler and steam engine are being installed and Mr. Goldman would like to purchase a second hand gasolene or acetylene singeing machine, 30 inches or wider, or possibly an electric singeing machine, also calenders. A name for the plant has not been decided upon, but it will probably be known as the Milford Linen Co. Manufacturing will be started about June 15.

*New York, Farmingdale. The Independent Silk Dyeing Company, reported incorporated under the laws of New York in February with capital stock of $50,000, is the company which is building the skein silk dyeing plant in Farmingdale. Construction work was started on the building May 1 and operations will be started, according to plans, on August 1. Skein silk dyeing in all its branches will be carried on and employment will be given to about 100 hands. F. C. Wettlaufer is president, and R. A. Weber, St. James, N. Y., is treasurer. Details of the plant have been given in previous reports.

*Pennsylvania, Hazelton. The new brick and concrete mill, 50 by 100 feet, to be built by A. J. Kummerer & Son, proprietors of the Hazelton Bleach Works, will be located at the corner of Mill and Chapel Sts., and is to be completed about the first of September. Equipment for bleaching knit goods and cotton yarns will be installed. Harry J. Kummerer is superintendent and buyer.

Pennsylvania, Philadelphia. The Phoenix Dye Works, Witty & Clearfield Sts., are adding a peroxide bleaching plant for hosiery. Ernest Muller is proprietor.

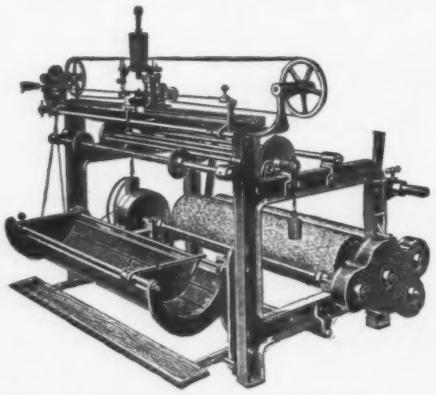
Pennsylvania, Philadelphia. William N. Morice, president of the Philadelphia Bag Co., manufacturers of burlap bags at Front and Tasker Sts., together with Frank M. Underkuffler, E. W. Brown and John H. Morice, have applied for a charter for the Morice Twine Mills, which they will equip with machinery for the manufacture of twines, etc.

*Pennsylvania, Royersford. Four new kiers have been added to the bleaching department of the Snow White Bleachery, doubling the capacity. Equipment also has been installed for dyeing delicate shades of hosiery, and new drying arrangements have been made. They are bleachers of underwear, cotton goods, etc. The business was incorporated in January with capital stock of $15,000, and it was noted that the plant would be increased.

Wisconsin, La Crosse. The Senn Hammock Company, 2321 So. 13th St., manufacturers of hammocks and porch shades from hand woven goods, contemplate enlarging their business. At present three looms are operated. F. R. Senn is the proprietor and buyer.

*Wisconsin, Neenah. Machinery for the plant of the new National Fibre Textile Company is being installed. This concern was organized in February with capital stock of $50,000, as noted, and will manufacture paper yarns and fabrics, with capacity at the start of 30,000 pounds per day. The equipment includes a special type of spinning machinery and looms, also finishing machinery. A 3-story brick building has been leased from the Kimberly-Clark Co., paper manufacturers, and is being remodeled to suit the requirements of the new industry. The officers of the company are P. R. Thom, president; E. Szepesi, vice-president and general manager; H. Price, treasurer, and J. S. Sensenbrenner, secretary. All the officers with the exception of Mr. Szepesi are connected with the Kimberly-Clark Company.

Can Handle 600 Cuts a Day



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It takes cloth from the loom, unwinds, sews and rewinds it into rolls of any size up to 3000 yards.

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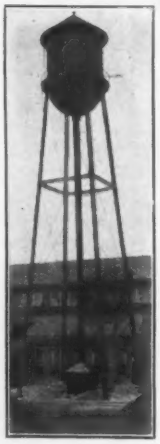

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FACTS AND GOSSIP.

*Pennsylvania, Columbia. Schwarzenbach Huber Company deny the report that the Columbia Silk Mill branch will be enlarged.

Pennsylvania, Easton. The Stewart Silk Company, whose plant has been operated overtime for a long period to catch up with orders, has presented the employes with gifts of money in recognition of their faithfulness.

Pennsylvania, Marcus Hook. The Benzol Products Company is rushing work on its new plant here for the manufacture of aniline oil and other coal tar products. Seven large brick, fireproof buildings are being constructed, on a plot comprising 25 acres.

Pennsylvania, Philadelphia. A charter has been asked for Schofield, Mason & Co., under the same name. They are manufacturing Wilton and Brussel rugs and carpets with 13 looms at Cumberland, Fairhill and Reese Sts.

Rhode Island, Greystone. Joseph Benn & Sons, Inc., are starting up additional machinery and giving employment to many more hands. An official of the concern is quoted as stating that a better situation is apparent.

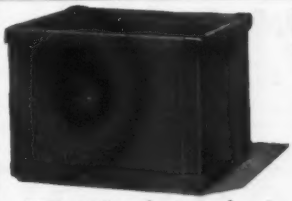
Rhode Island, Pawtucket. A concern known as the Eureka Dyeing & Bleaching Company is conducting a business of dyeing and bleaching on commission in the dye house on Japonica St. formerly operated by the Hope Webbing Company, who discontinued using it about a year ago. William W. Collins of the Collins Bros. Machine Company, is treasurer and buyer, and William Rogers is superintendent.

Rhode Island, Providence. The Cushion Fabric Company has been incorporated to manufacture and sell textile fabrics of all kinds, with capital stock of $50,000 by Patrick P. Curran, Henry C. Hart and Joseph P. Canning.

*South Carolina, Langley. The sale of the plants of the Langley Mfg. Company here, the Seminole Mfg. Co. at Clearwater, and the Aiken Mfg. Co. at Bath, has not yet been confirmed by the court. These mills were bid in by a creditors' committee composed of E. A. Pendleton, cashier of the National Exchange Bank, Augusta, Ga.; William McKinley, Jr., vice-president of the W. H. Langley Co., N. Y., and Charles S. Low, secretary of the mills, who are formulating plans for a reorganization, and just as soon as the sale has been confirmed by the court the committee will go ahead with plans and prepare to start up the mills as soon as possible.

Tennessee, Johnson City. The Chamber of Commerce is interested in a plan for organizing a $350,000 company to build a cotton mill and two smaller companies to establish knitting mills.

*Tennessee, Memphis. The committee recently appointed to solicit subscriptions for the new cotton mill is at work and is securing subscriptions for stock in a $500,000 company to build and operate a modern textile plant in Memphis which it is proposed to operate under the name of the Chisca Mfg. Company.



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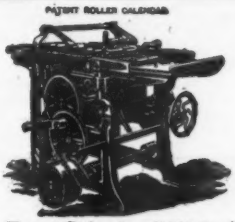

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FACTS AND GOSSIP.

New York, New York City. H. P. Butcher, of H. P. Butcher & Co., 366 Broadway, selling agents of knitted underwear, is interested in establishing a knit underwear plant at some point in the South. Mr. Butcher was reported interested in a similar project several months ago, but was not ready to go ahead with plans when the previous reports appeared.

New York, New York City. The H. W. Knitting Mills, Henry Weiss, proprietor, have moved from 72 Lewis St., to 550 Broadway. Sweaters and bathing suits are manufactured.

*New York, Utica. Reports that the Utica Knitting Company is having plans prepared for an addition to the yarn mill on Schuyler St. are without foundation in fact.

New York, Utica. At the trustees' sale of the plant of the Capron Knitting Company the property was purchased by John A. Roberts for $40,000, subject to a mortgage of $32,000. There have been numerous plans in recent months for starting up this plant.

New York, Utica. The name of the Lynch Knitting Company has been changed to the Clover Knit Goods Company.

North Carolina, Newton. The Fidelity Hosiery Mills are running full time with plenty of orders on hand. Recently some new equipment was added.

Pennsylvania, Nazareth. Damage estimated at $3,000 was caused by an explosion in the dyeing department of the Nazareth Waist Company, manufacturers of knitted waists for children. The cover of one of the dyeing machines was hurled through the roof.

Pennsylvania, Newcastle. The Newcastle Knitting Mills have received orders for export to Australia and South America. This is a new concern established within the past year to manufacture men's and women's cotton hosiery on 100 knitting machines. John M. Given, Inc., N. Y., is the selling agent.

Pennsylvania, Philadelphia. The Thurman Manufacturing Co., 307 Wakefield St., Germantown, manufacturers of fancy knit goods of all kinds, have placed a contract for new supports for a large tank with which the plant is equipped, at a cost of $1,500.

Pennsylvania, Philadelphia. The following concerns manufacturing knitted neckties are reported as going out of this line and disposing of their equipments: Edwards & Troth Co., 1024 Filbert St.; Howell, Stein & Co., 1302 Filbert St.; Portner Bros. & Son, 257 Market St.; Rose & Lehrfeld, 1020 Filbert St.; The Commercial Knitting Mills, S. E. Cor. 11th and Columbia Ave.

Pennsylvania, Philadelphia. It is reported that Wucherer, Vogel Bros. and Wildemuth, have recently purchased the plant of the International Silk Knitting Company, located in the Lomax Building, Jasper and Orleans Sts., which is equipped for the manufacture of full fashioned hosiery, containing 20 full fashion frames. The new owners will start the plant up again at once.

FACTS AND GOSSIP.

New Jersey, Paterson. The new silk cloth suitable for men's clothing is growing in favor and it is stated that about 200 men in Paterson are having silk suits made up. A silk suit luncheon is to be held under the auspices of the Chamber of Commerce on Tuesday, July 3. About 50 different patterns of the new cloth have been gotten up by the Victory Silk Company.

New York, Brooklyn. The Jerome Mfg. Company has been organized with capital stock of $20,000 to manufacture textile fabrics. The incorporators are Harriet Benjamin and Jacob Cohen, of New York.

New York, Brooklyn. Twenty-three buildings will compose the new plant of the W. Beckers Aniline & Chemical Company, Inc. Seven of these buildings are now completed and are manufacturing. All of the intermediates used by this concern before the war in the production of the group of dyes manufactured, will be made.

New York, Long Island City. Four lots of land on the south side of 21st St., between Jackson and Polk Aves., have been purchased by the Elesco Lace & Embroidery Company, and a factory building will be erected on the site.

New York, Millbrook. Howlett & Hockmeyer & Company have been granted a charter with capital stock of $50,000 to manufacture corduroys, velvets, etc. The incorporators are James R. Howlett, of Brooklyn, Oliver E. and Otto Hockmeyer, of Lowell, Mass. Messrs. Hockmeyer are interested in the Waterhead Mills, finishers of corduroys, located at Lowell, Mass.

*New York, New York City. The Athenia Textile Company, recently reported incorporated, are converters of fine cotton fabrics.

New York, New York City. The American & Mexican Ramie Company, Inc., has been organized with capital stock of $250,000 by George W. Schlichten of Pasadena, Cal.; E. W. Davidson, New Rochelle, N. Y. ,and E. F. Dresden, of New York City.

New York, Wappingers Falls. Standard Aniline Products, Inc. This new concern organized for the manufacture of coal tar products, informs us that it has begun the production of intermediates and will at once take up the production of finished dyes. The New York office is at 366 Fifth Ave.

*North Carolina, China Grove. The Patterson Mfg. Company will continue to run the mill in China Grove. As noted in a previous report the branch mill at Kannapolis has been sold to the Cannon Mfg. Company.

North Carolina, Rockwell. The Barringer Mfg. Company, cotton warps and skeins, has begun the operation of its plant night and day. 6,300 spindles are operated.

*North Carolina, Valdese. The new Waldensian Swiss Embroidery Company, recently incorporated with capital stock of $125,000, will manufacture embroideries, laces and insertion. J. L. Garrow, of the local knitting mill, is interested.

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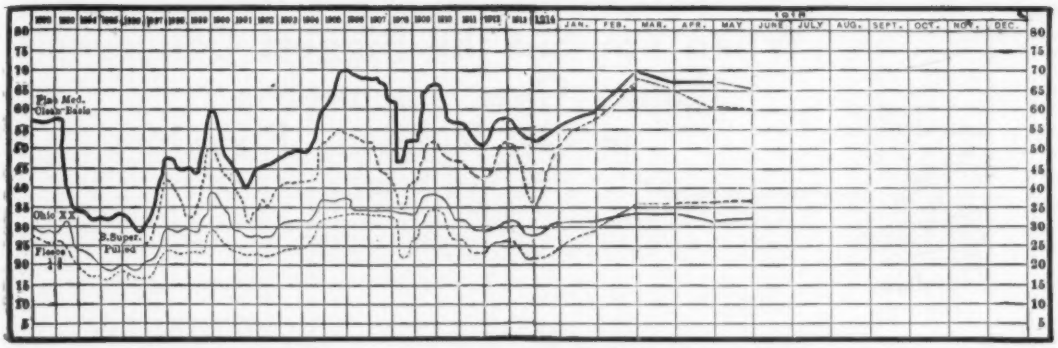


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

THE WOOL MARKET

Nothing has occurred to change materially the strong position of the wool market. Receipts of foreign wool have been heavy but without any appreciable influence in depressing prices. This is undoubtedly due to the depletion of stocks, both at the mill and in dealers' hands. Buying in the West has been fairly active, but restricted in some degree by the high prices demanded by the growers. Medium wool is selling at 27 to 28 cents in Montana and practically the same level of prices prevails throughout the other wool growing States. The goods market does not warrant any optimism regarding wool, but the wool market has long been independent of the regular wool goods market owing to war conditions. The Australian markets are firm, prices at the opening of the Sydney sales were as follows: 70s warp, 70 cts.; 64s warp, 68 cts. Manufacturers are facing an specially difficult problem owing to the abnormal conditions prevailing in the raw material markets and the unsatisfactory state of the goods trade. Clothiers are buying cautiously owing to the depression in many lines and the uncertainty regarding the future. The market for worsted tops is firm owing to the lack of competition from England where customers have booked orders to cover their production for practically the balance of the year.

MILLS STARTING UP.

Minnesota, Fergus Falls. The Fergus Falls Woolen Mills will be started up June 1 on blankets, flannels and mackinaws, after an idleness of over a year. The company operating the plant will be known as the Fergus Falls Woolen Mills Co., Inc. Oliver Olson is president; Nels Haagenson, vice-president; C. O. Utne, secretary, and A. G. Anderson, treasurer. Since the plant closed there have been a number of propositions for interesting new capital and reorganizing the company or leasing the plant.

*Utah, Brigham City. The Hyrum Woolen Mills, Thomas Baron, proprietor, are beginning operations here. Mr. Baron purchased the old factory building and made extensive repairs and alterations and removed his equipment here from Hyrum. Blankets, linings, hosiery and knit goods are manufactured.

TETRAZO COLORS
FOR COTTON

We offer these products in all shades for the dyeing of cotton in any form.
Among them will be found colors specially adapted to meet the various requirements of fastness to light, washing, cross dyeing and fulling.
Shade cards and samples, with full information, cheerfully furnished on application.

AMERICAN DYEWOOD COMPANY
NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT.

Direct Acting

Nearly 2000 in Daily Use

Double Geared

When You See the Biggest Concerns Falling Over Themselves to Get Ridgway Elevators

If you were a Real Smart Up-to-date Mill Owner you would guess there was a whole lot about the Ridgway Steam Hydraulic Elevator that you do not know.

And which cannot be put in newspaper advertisements.

Well, I guess so!

And when such an old conservative engineering society as the FRANKLIN INSTITUTE, of Philadelphia, stamps it as one of the GREAT INVENTIONS OF THE CENTURY

You can hardly help saying to yourself, "There must be something about this Ridgway Elevator I am not up to."

Well, I guess so!

All during the business depression we have been busy as bees making these wonderful elevators for the best concerns all over the land—most of them repeat orders.

Take this group for instance, any one of which is reference enough for the LIVE ONE.

Standard Oil Co.	**Proctor & Gamble Co.**	**Crane & Co. (Dalton)**
Yale & Towne Mfg. Co.	**H. J. Heinz Co. "57"**	**United States Government**
Cluett, Peabody & Co.	**International Harvester Co.**	**E. I. Du Pont & Co.**
Jos. Benn & Son	**John Wanamaker**	**General Electric Co.**
National Cash Register Co.	**Remington Typewriter Co.**	**Packard Motor Car Co.**
Meritas Mills	**Continental Gin Co.**	**National Silk Dyeing Co.**
Erie Railroad Co.	**Gem Mills**	**John Morrell & Co.**

You are an educated and intelligent man. Do you think a concern like the *General Electric Co.* got seven Ridgway Elevators just for their health?

And the *United Gas Improvement Co.*, nearly 200 of them.

And the Great Gas Companies of New York and Brooklyn change all their elevators to Steam-Hydraulics just for fun?

Wake up, old fellow, and find out what it means to

"Hook 'er to the Biler"

CRAIG RIDGWAY & SON CO., Coatesville, Pa.

ELEVATOR MAKERS TO FOLKS WHO KNOW

KNITTERS!

Any combination of wool, cotton, silk, artificial silk, mercerized cotton, linen can be peroxide-bleached without injury.

In fact it is the only harmless bleaching process known.

We have had twenty years practical experience.

At your service for the asking.

THE ROESSLER & HASSLACHER CHEMICAL CO.

NEW YORK

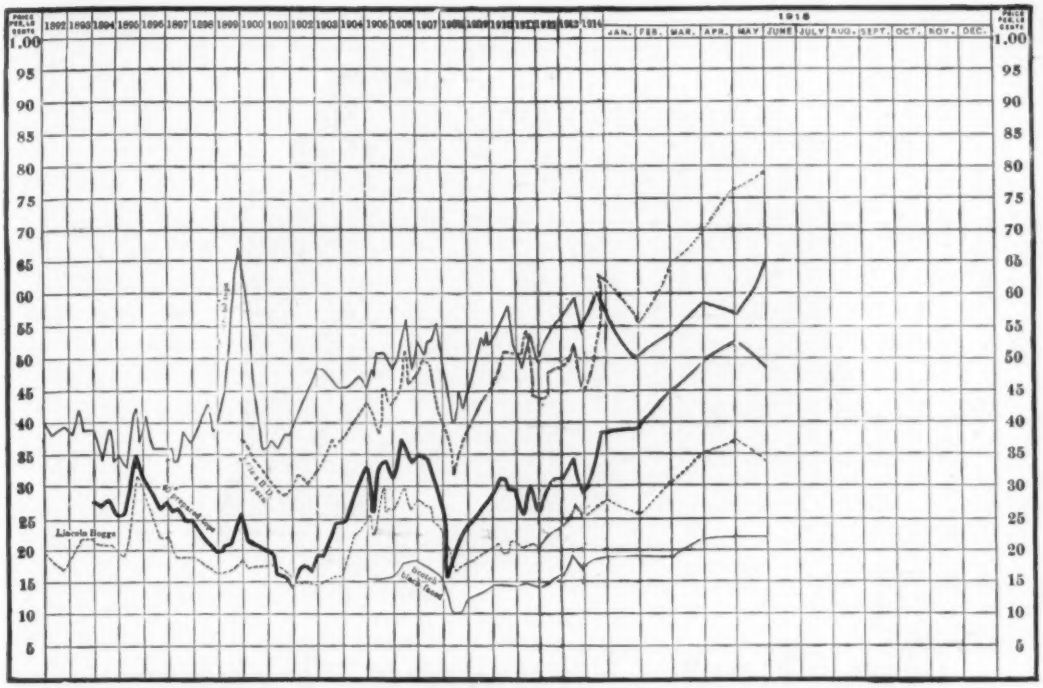


CHART SHOWING COURSE OF PRICES FOR WOOL, TOPS, AND WORSTED YARN AT BRADFORD, ENGLAND

THE BRADFORD MARKET

Bradford, Eng., May 25, 1915.

It looks now as though merinos and crossbred prices were to find something like their old equilibrium. Merino tops have advanced in response to demands from the home market. Crossbreds of the coarser qualities have declined in face of the larger supply of wool and the suspension of khaki buying by the British Government. The uncertainties of war prevent the formation of any fixed opinion about the further purchases, but it is generally supposed that buying will be renewed. For their part holders of wool suitable for army goods are disinclined to be hammered, but users would gladly see easier prices.

The difficulty of getting wool forward from the ports has been relieved and succeeded by the equal difficulty of getting wool through the combs. The effect is to make tops relatively dearer than wool and, owing to the run on spinning machinery, yarn is dearer again than tops. Times are accordingly good for owners of machinery of these kinds and not bad for looms.

The question of prices for the new English clip becomes interesting and some difficulties in making ideas meet are apprehended. Dealers argue that with crossbreds down 2 cents, English wools which have to be put into stock ought to be 4 or 6 cents down from the highest level. The last clip has been practically exhausted and farmers may be inclined to stand firm.

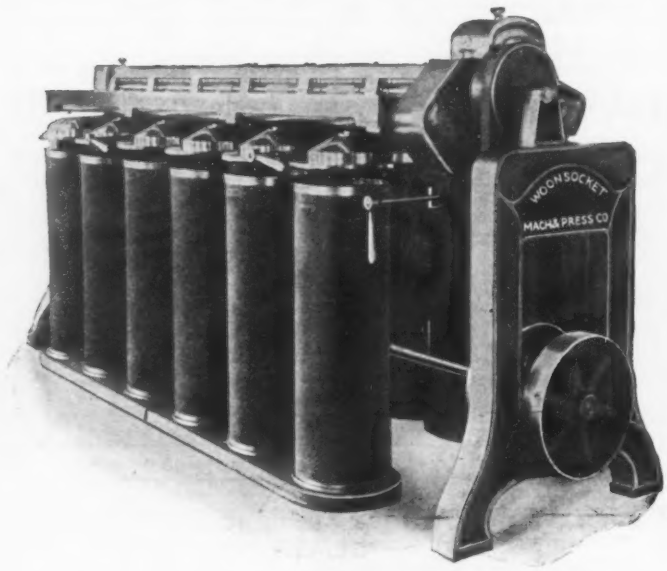
It is manifest that merino prices are in a firmer platform than crossbreds, as the available combs and spindles are full for months and in several cases until the year end.

Enlargements and Improvements.

Indiana, La Porte. Contract has been awarded by the La Porte Woolen Mills for the installation of a water softening plant with capacity of 50,000 gallons per hour. The installation will be completed about July 15. The cost of this improvement will be in the neighborhood of $20,000.

Indiana, Seymour. The Seymour Woolen Factory Company, manufacturers of blankets and flannels, will build a 2-story addition, 80 by 160 feet, to be used for manufacturing purposes, and a dye house, 60 feet square. W. E. Russ, of Indianapolis, is the architect. B. F. Schneck is president and treasurer, and C. A. Hemmer, secretary.

Maine, Sanford. One hundred looms are being transferred from the weave room of the Goodall Worsted Company on High St. to the Minerva department and are being replaced with new wide looms. A new two-ton auto truck has been purchased for mill use.



The Best Drawing Frame

The unusual success of this drawing frame in the leading cotton mills is, to a great extent, due to the fine pitch gearing that is used.

The pitch is finer than on any other drawing frame and allows a finer change and smoother running gearing.

The special framing of the machine gives strength without clumsiness. The Woonsocket drawing frame is noted for its simplicity of construction and the accessibility of all its parts.

Drop us a line so our representative can talk facts with you.

Woonsocket Machine & Press Co.

General Offices, 100 Summer Street, Boston

Southern Representative, J. H. MAYES, Charlotte, N. C.

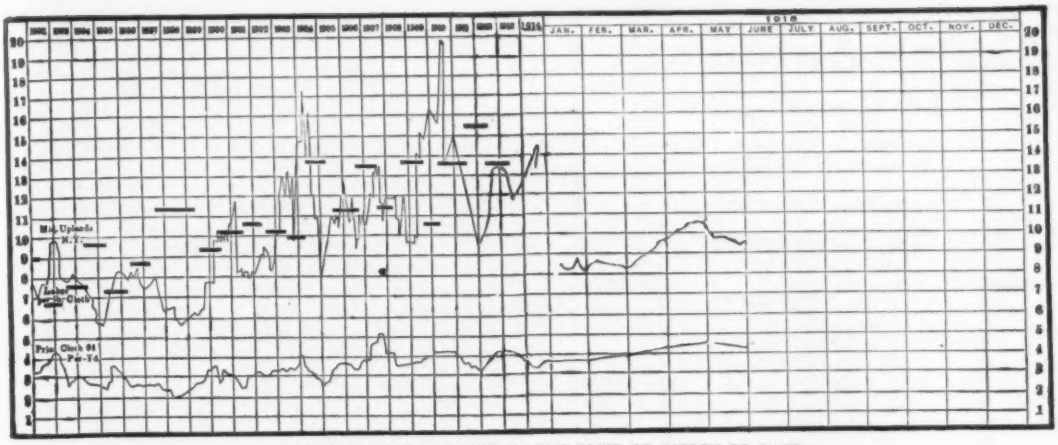


CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

THE COTTON MARKET

The market for raw cotton has been dominated by international politics. The destruction of the Lusitania and other merchant vessels and the prospect that the submarine campaign will continue has been the chief factor in causing the decline shown on our chart. In addition to this the weather conditions in the South have been favorable for a large crop and reports indicate that there will be a large acreage planted the next season in spite of the campaign that has been conducted since the war broke out to restrict the size of the crop. There is a certain belief that a large quantity of cotton will be carried over and if to this is added a crop even of average size the result will be lower prices for the staple. The movement into sight from August 1 to May 28 is reported by the "Chronicle" as follows:

Year	Bales
1914-15, May 28	14,483,356
1913-14, May 28	14,219,876

The same authority estimates the world's visible supply of cotton of all kinds on May 28 at 6,754,667 bales, as compared with 4,687,100 bales on the corresponding date of 1914; 4,205,202 bales in 1913 and 4,150,044 bales in 1912.

COTTON.

New Mills.

Alabama, Piedmont. An extension is to be built on No. 2 Mill of the Coosa Mfg. Company, which will be 118 feet long. Construction work will be started at once. The new space will be equipped with 10,000 spinning spindles and 5,000 twister spindles, bringing the equipment up to 40,000 spindles. Recently a number of spinning frames and twisters were taken out and replaced with new machinery and a recreation hall for employes is under construction. The affiliated Standard Processing Company at Chattanooga, Tenn., is being enlarged to increase the facilities for winding and gassing and the increase at Piedmont was made necessary by the demands of the Standard Processing Company at Chattanooga, for increased supply of yarns for finishing.

*Alabama, Siluria. The Buck Creek Cotton Mills will change over to electric power from the lines of the Alabama Power Co., of Birmingham, about June 15. It was noted in a previous report that electric motors would be installed and about 1,000 h. p. would be purchased from the Alabama Power Company.

*Alabama, Sylacauga. Within the next four months the Eva Jane Mill and the Central Mills, both controlled by the Avondale Mills at Birmingham, will be changed over from steam to electric power. 3,000 h. p. will be purchased from the Alabama Power Company at Birmingham. The Eva Jane Mill manufactures white and colored goods from coarse yarns on 40,000 spindles and 1,200 looms. The Central Mills manufacture hosiery yarns on 26,000 ring spindles.

*Canada, Ontario, London. The Middlesex Mills, Ltd., whose organization was reported in March, will establish a plant here for manufacturing Micheline quilts, satin quilts, crochet quilts, towels and similar goods, and the construction of a mill especially designed to manufacture these lines will be started about September 1. The location will be at Adelaide and Saulsbury Sts. The equipment will include warping machinery, 100 looms, yarn and piece dyeing equipment, bleaching and finishing equipment, electric motors, etc. 1/14 to 2/40 yarns will be bought. The company has capital stock of $80,000. W. J. Teasdall will be president and Albert Mitchell will be managing director, superintendent and buyer. A treasurer will be elected later. The product will be sold direct.

Baer's Automatic
Yarn and Cloth
Tester
MOTOR DRIVEN

Sold Exclusively Through
ALFRED SUTER
Textile Engineer
200 Fifth Ave., New York

The Metallic Drawing Roll Co.
INDIAN ORCHARD, MASS.
MANUFACTURERS OF
Metallic Rolls

Especially adapted for Cotton Mills. 25 to 33 per cent more Production Guaranteed. Weight Reduced 33 to 50 per cent. No Leather Covering Bill.

WRITE FOR PARTICULARS

*Georgia, West Point. The new $500,000 cotton duck mill to be built by the West Point Mfg. Company at a location just south of West Point, will be known as Mill No. 3 of the West Point Mfg. Company. The equipment will include 25,000 spindles and 500 looms. Particulars of the buildings, plans and specifications which are being prepared by J. E. Sirrine, of Greenville, S. C., have been given in a previous report.

Massachusetts, Fall River. A new storage warehouse, 68 by 150 feet, is to be erected for the Stevens Mfg. Company, manufacturers of Marseilles and crochet quilts, and linen damasks.

Massachusetts, Lynn. Plans will be completed for the proposed new cotton mill by Harry L. Gilman and William A. Armes, 8 Congress St., Boston, within thirty days, and if the promoters are ready to go ahead by that time it is probable that construction bids will be invited and arrangements completed for building the plant. The plans will provide for a main mill with capacity of 50,000 spindles and 1,500 looms, a storehouse and a steam and electrical power plant capable of developing 1,300 k. w. The initial equipment, if the mill is built, will probably be 35,000 spindles and 1,000 looms for weaving shoe goods. George E. Coates, formerly secretary of the Lynn Chamber of Commerce, is one of the promoters.

*Massachusetts, Whitman. James L. Harring, of Fairhaven, Mass., at one time with the New England Cotton Yarn Company as superintendent, heads the Whitman High Speed Spinning Company, which has leased a factory building for a period of five years and plans to establish a 5,000-spindle cotton yarn plant to make carded and combed yarns. C. S. Wynn, 120 Milk St., Boston, is treasurer. It is stated that they plan to begin operations in August.

*North Carolina, Albemarle. The Wiscasset Mills Company will install 12,000 spindles and preparatory machinery in No. 5 Mill, now under construction.

*North Carolina, Asheville. About September 1 the additions under construction for the French Broad Mfg. Company will be completed, and new equipment will be set up ready for manufacturing about September 1. Sixty additional hands will be employed. One of the new buildings will be a 4-story reinforced concrete warehouse, while the other building will be a spinning mill, 200 by 100 feet, 2 stories and basement. The new equipment will include 5,000 spindles and preparatory machinery, electric motors, etc., to manufacture 12/1, 10/2, 8/2 and 6/2 yarns. Recently the capital stock of the French Broad Mfg. Company was increased to $750,000. The present officers are I. Richard Stewart, president; Louis V. Smith, treasurer; Edward F. Wellman, superintendent and C. S. Wright, buyer. The product is sold by The Farish Company, 110 Worth St., N. Y.

*North Carolina, Granite Falls. D. H. Warlick, secretary and treasurer of the Dudley Shoals Cotton Mill Co., is organizing a new company to build a 5,000-spindle mill at Granite Falls. A sufficient amount has been subscribed for stock to warrant the beginning of construction work, according to report. This project has no connection with the Granite Cordage Company, as recently intimated.

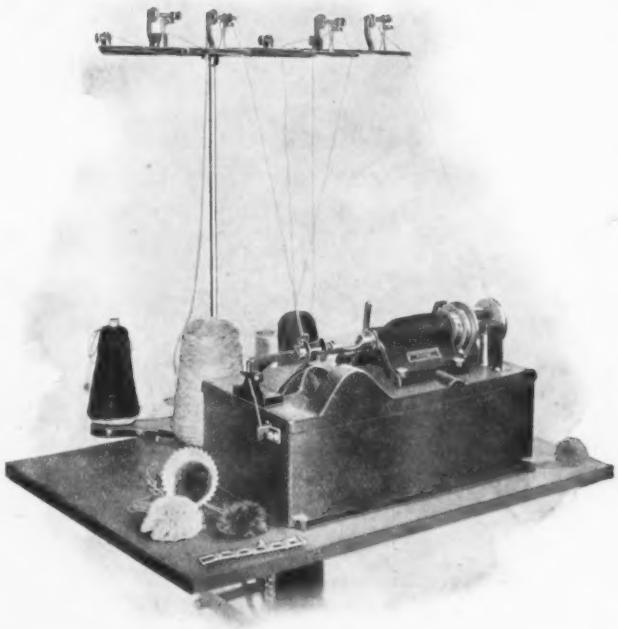
Pompons! Pompons Galore!

for Toques, Caps, Hoods, Scarfs, Slippers and all other ornamental uses are now made by machinery in any desired size, in various color combinations.

No Shearing or Trimming—No Irregularity in Size
No Waste of Material

Can be placed on Sewing machine Table

Requires only one-eighth H.P. Immediate Deliveries



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No. 1,063,288
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Operating speed
1000 to 1200
Rev. Per Min.

Grosser Pompon Machine.

Send sample of pompons you require, submit small quantity of your material. We will show you important savings and submit full particulars. Address

The Grosser Knitting Machine Co.

Max Nydegger

260 West Broadway **New York**

MERCERIZED YARNS

Dyers, Bleachers, Gassers

Dyers of Colors Fast to

SUN AND BLEACHING

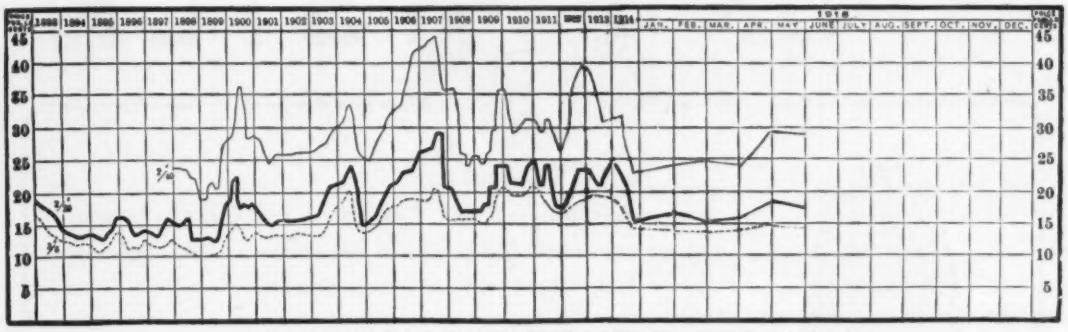
Aberfoyle Manufacturing Company

CHESTER, PA.

402 Morris Building
Philadelphia

746 Insurance Exchange
Chicago

Yarn Department



GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

THE COTTON YARN MARKET

This market during May was very discouraging. There were indications of better business during the early part of the month, but the Lusitania calamity and the decline in the price of raw cotton affect the early improvement. Conditions are ripe for improvement and may change at any time. One of the brightest signs of the times is that there is the complaint of scarcity of skilled textile help. This especially applies particularly to weavers. A number of concerns in this market have advertised for help and still complain that they are unable to run all of their looms because they are unable to obtain weavers. Yarn prices have receded from the highest mark from 1/2 to 1 cent per pound, but spinners show little inclination to accept business at a reduced figure. Most of them have about four to six weeks business ahead and they prefer to stand pat until forced to look for business on the basis of today's cotton yarn prices, which are very reasonable. Any increased demand will cause the market to advance to previous figures.

Manufacturers are running more machinery than a month ago, but all complain that orders are based on yarns secured at low prices. Until they can see some indication that their customers are willing to pay an advance on the price of their fabrics they will not place contracts for yarns ahead.

The dyestuffs situation continues acute. Some colors are impossible to obtain at any figure and others are being held at such exhorbitant prices that manufacturers cannot afford to manufacture the goods for which they were used. There have been few large contracts placed for weaving yarns, but there has been some improvement in the demand for narrow fabrics and some lines of dress goods. The demand for upholstery goods and trimmings continues very sluggish.

Eastern Cops

6s	16¼
8s	15¾
10s	17¼
14s	17¼
16s	18¼
18s	18¾
20s	19¼
22s	18½
24s	19¼
26s	20¾
30s	21¾
34s	23½
36s	24½
40s	25½
12s	18
14s	18½
18s	19½
20s	20½
24s	21½
26s	22½
30s	23½
36s	26
40s	28
45s	32
50s	34
55s	40
60s	43

Eastern Two-Ply Warps, Carded Peeler

2/30s	24
2/36s	25½
2/40s	28½
2/45s	33
2/50s	35
2/60s	44

SPUN SILK

Corticelli

We specialize on 2 and 3 ply Spun Silk yarns in all sizes put up on cones, tubes, spools or skeins in the grey or dyed. Let us figure on your requirements.

Nonotuck Spun Silk is made in the same mill, under the same careful supervision as the famous Corticelli Spool Silk, which has won 40 Highest Awards at Expositions at home and abroad. Send for samples.

Nonotuck Silk Company

Corticelli Silk Mills Established 1838 Florence, Mass.

THE J. R. MONTGOMERY CO.

Windsor Locks, - Conn.

MANUFACTURERS OF

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools, Tubes and Cones. In Fancy Twist, Colors and Printed.

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

MONUMENT MILLS, HOUSATONIC, MASS.

HIGH GRADE COTTON YARNS White, Colors, Bleached

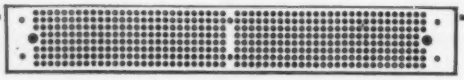
On Beams, Jack-Spools, Cones, Skeins and Chain Warps

FAST-BLACKS & COLORS { For Woolen Mills a Specialty { WE SELL DIRECT

PRESS PAPER

HIGHEST GRADE BEST VALUE

Mills RAINBOW, CONN.



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SPECIALTIES

FOR ALL PURPOSES Inquiries Solicited

THE MERWIN PAPER CO

Address HARTFORD, CONN.

THE PHILADELPHIA MARKET

7s and coarser	16
8s and 9s	16
10s	16½
12s	17
14s	17½
16s	18
18s	18½
20s	19
22s	19½
24s	20-20½
26s	21
30s	22
40s	27
50s	35

Southern high grade mule yarns:—

Cones

10s	18
12s	18½
14s	19
16s	19½
18s	20-20½
20s and 22s	21-21½
24s	22

Southern frame yarn, lower grades:—

6s and 8s	15¾
10s	16

Eastern cones (high grade quality):—

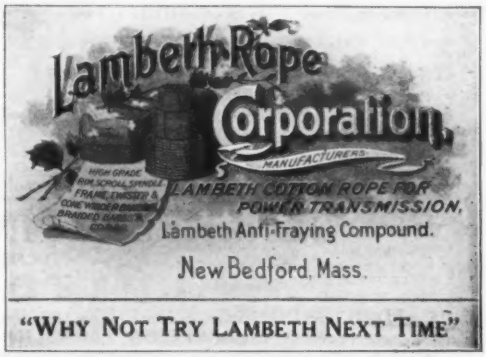
10s	18½
12s	19
14s	19½
16s	20½
18s	20½-21
20s and 22s	21½-22

Skein yarn (mostly Southern):—

4s and 8s soft	15
10s and 12s	15½-16
14s and 20s	16½-18
22s	18½
10/2	15½
16/2	16½
20/2	17½-18
30/2	20-20½
40/2	27
50/2	35
60/2	41
8/2	16
7/6	16½

Southern warps:—

10/1	15
14/1	16
16/1	16½
20/1	17½
22/1	18½
26/1	20
30/1	21
8/2	16
12/2	16½
14/2	17
16/2	17½
20/2	18
26/2	20
30/2	21
40/2	28
50/2	35


Lambeth Rope Corporation
MANUFACTURERS
HIGH GRADE RIM, SCROLL SPINDLE FRAME, TWISTER & CORE WINDER BRAIDED CARRIER COTTON
LAMBETH COTTON ROPE FOR POWER TRANSMISSION.
Lambeth Anti-Fraying Compound.
New Bedford, Mass.
"WHY NOT TRY LAMBETH NEXT TIME"

JOHN F. STREET & CO.

Cotton Yarns

PROVIDENCE, R. I.

Providence, Chicago, Philadelphia, New York

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530 BROADWAY, NEW YORK

MERCERIZED GLAZED GASSED } COTTON YARNS

C. MOORE & CO.

Manufacturers of

Twines, Threads and Yarns

Jacquard Harness Twines of all kinds on hand and made to order

S. W. Cor. Fifth and Market Sts., Phila.

JAMES E. MITCHELL CO.

COMMISSION MERCHANTS

COTTON YARNS

122-124 Chestnut Street, - - - Philadelphia, Pa.
Brown Building, 185 Summer Street, - Boston, Mass.

Reels for Cotton WOOLEN AND WORSTED

Patented Hosiery Winders, Cop Winders and Spoolers

LINDSAY, HYDE & CO.,

2124 to 2130 E. York St., PHILADELPHIA, PA.

FIBRE-COVERED SHUTTLES

OF EVERY DESCRIPTION * * * ALSO IN PLAIN

OTTO KUNZE, 2542 Seventh Ave., New York.

S. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS

FITCHBURG, MASS.

Capacity, 45,000 Spindles

HIGH GRADE YARNS

From Egyptian and Peeler Cotton, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted

JENCKES SPINNING COMPANY

PAWTUCKET, RHODE ISLAND

COTTON YARNS

CARDED and COMBED, in Nos. 10 to 120, from PEELER EGYPTIAN and SEA ISLAND COTTONS
MERCERIZED YARNS, IN SINGLE OR PLY, A SPECIALTY

LINDSAY THOMPSON & CO., LTD.

FLAX SPINNERS BELFAST, IRELAND

Linen Weaving and Knitting Yarns

LINEN THREADS OF EVERY DESCRIPTION

T. J. PORTER & SONS *Selling Agents,* Philadelphia

Large Stocks Quick Delivery

HUGHES FAWCETT

115 and 117 Franklin St., New York

Linen Weaving and Knitting Yarns

Linen Jacquard Harness Twines

And Linen Yarns and Threads for every purpose

Turkey Red Yarns

LARGE STOCK PROMPT DELIVERIES

Industrial Tape Mills Co.

Jasper and Huntingdon Sts. Phila., Pa.

Manufacturers of

NARROW FABRICS

SPOOL TAPES. STAY BINDINGS AND BRAIDS

Also Sole Manufacturers of

SAXON

New Guaranteed Non-Shrinkable Tape

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MANUFACTURERS OF

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SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES

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SPOOL TAPES A SPECIALTY

TELEPHONE CONNECTION OFFICE AND MILL ALLEGHENY AVE. AND EMERALD ST., PHILADELPHIA

WRITE — FOR SAMPLES AND PRICES ON SEWING AND SPLICING THREADS IN ALL COLORS TO — TO FLORENCE THREAD CO. FLORENCE, N.J.

HOSIERY AND UNDERWEAR MAKERS WHO WANT TO MATCH COLORS - WRITE

The Ramie Agency Manufacturers' Agents New York

Ramie Yarns and Threads

HAVE REMOVED
TO NEW AND LARGER QUARTERS AT
432 FOURTH AVE. Corner of 29th St.

THE LINEN YARN MARKET

The demand for linen yarns at this time is very poor and the explanation is that the present prices are prohibitive. There is some disposition on the part of spinners to meet buyers of ordinary line and tow yarns, but it is far from encouraging. In the case of good line warp yarns and fine weft yarns, the position is very different. Owing to the scarcity of suitable material to make them, with the possibility of an exhaustion of the supplies in the immediate future, spinners who have any stock of flax are compelled to maintain their present quotations and in many cases to demand an advance. The competition along these lines is becoming weaker from day to day. Spinners whose stocks are almost exhausted are giving notice that they have stopped spinning these numbers.

It is reported that the sowing of flax in Ulster is now ended, as the last seed received has been put into the ground. The weather is favorable and everything looks encouraging, as the plants are strong and healthy. The outlook for flax from the Continent, especially from Russia and Holland, is anything but bright. It is hoped, however, now that the port of Archangel is open, that considerable quantities will be shipped. On the whole the outlook for flax spinning is far from bright.

("A" Quality)

35s Lea on cones	95
50s Lea on cones	1.00
60s Lea on cones	1.05
80s Lea on cones	1.10
90s Lea on cones	1.15
100s Lea on cones	1.25
110s Lea on cones	1.40
120s Lea on cones	1.75

WOOLEN MILL NEWS

Rhode Island, Centredale. Changes and improvements are being made in the power department of the Centredale Worsted Mills and two new water wheels and some electric power equipment have been ordered. It was noted in March a general overhauling of equipment was taking place in the plants of this concern at Centredale, Providence, and Stillwater.

*Rhode Island, Woonsocket. The Lippitt Woolen Company, Inc. states that the new worsted yarn department being added will consist only of drawing and spinning. Tops will be bought. As noted in a previous report 2,000 spindles with preparatory drawing machinery is being installed in the space formerly occupied by the Manchester Company and will be operated in about two months under the management of John C. Parkinson.

*Vermont, Northfield. The bleachery department of Charles M. Davis & Company, manufacturers of white flannels, which was recently destroyed by fire, will be rebuilt. The operation of the main mill was not disturbed by the fire.

You know your production but—

Do you know what each machine, each operator, produces each day and each hour?
Do you know which men are money makers?
Do you know just where each job stands whenever you want to?

Durant Counters

Give you these exact figures which you need for economy in production and accuracy in cost calculation. Thirty styles, thirty days' trial. They have solved counting problems for your competitors.

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Steel Heddle Mfg. Co.

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Flat Steel Heddles and Frames

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Reed Wire — Duplex Heddles

Specialists in Metal Punching

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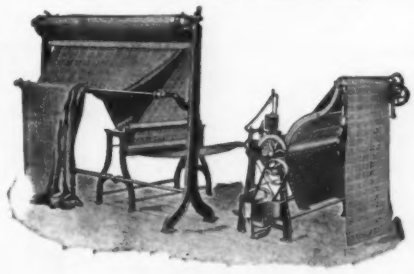
Philadelphia, Pa.

Wool Burring and Picking Machinery
Cloth Finishing Machinery



DOUBLING AND TACKING MACHINE

CURTIS & MARBLE MACHINE CO.
Worcester, Mass.

COTTON MILL NEWS

*Georgia, Forsyth. Contracts have been awarded by the Ensign Cotton Mills for 6,000 spindles and preparatory machinery to be installed in the addition reported in March, on which construction work was started several weeks ago. The addition will be 2 stories high with basement, 145 by 75 feet. Lockwood, Greene & Co., Boston and Atlanta, are the architects engineers.

*Georgia, Griffin. New machinery is being received at No. 2 Mill of the Kincaid Mfg. Company. It was noted some time ago that 8,500 spindles and 160 looms would be added for manufacturing cotton towels.

Georgia, Newnan. Two new twisters of 224 spindles each are being added by the McIntosh Mills and they contemplate purchasing new cards. The card room is being overhauled. B. T. Thompson is president and treasurer; R. B. Hubbard, secretary, and T. R. Lovern, superintendent and buyer. 10s to 30s cotton yarns, plain and black, single and ply, are manufactured.

Georgia, Rome. A filtering plant is being installed in the Anchor Duck Mills. As noted in previous reports the concern is building an addition and will install new waste yarn equipment, and 20 bag looms. These enlargements will be completed about July 15.

Massachusetts, Fall River. New machinery being installed in the Osborn Mills includes a bale breaker, openers and spinning frames in No. 1 Mill and new combers in No. 2 Mill.

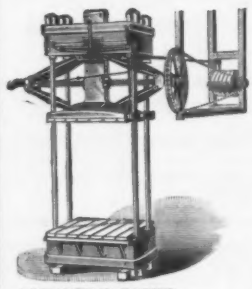
Massachusetts, Fitchburg. Plans and specifications are being prepared for a new dye house for the Parkhill Mfg. Company to be 4 stories high. The new structure will be located on the site of the present wooden dye house, and will be built around the present building, which will be continued in use during the operation.

Massachusetts, Saundersville. A small addition to be used for lavatories will be built at the Saunders Cotton Mills by the J W. Bishop Company.

New Hampshire, Nashua. New automatic box looms for weaving blankets are being installed in No. 7 Mill of the Nashua Mfg. Company to replace 240 old looms that are being scrapped. An addition has been built to increase the spinning and weaving departments and construction contract has just been awarded for a new 8-story warehouse to be erected at a cost of about $200,000.

New Jersey, East Orange. Seabury & Johnson, manufacturers of absorbent cotton and gauzes for surgical purposes, have ordered new bleaching kiers to increase their production.

*New Jersey, Sussex. The improvements being made by A. S. Anable, proprietor of the Sussex Mills, consist of the installation of new jacquard looms and some other equipment.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BALING PRESSES
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Hydraulic or Knuckle Joint
Any Size Any Power
Boomer & Boschert Press Co.
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TRADE MARK
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MAIN OFFICE AND FACTORY
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HAND KNOTTERS AND WARP TYING MACHINES

Dobbins Soap Mfg. Co.
PHILADELPHIA
Makers of Soaps Especially Adapted for All Kinds of Textile Mfrs. Use. Send for Sample.

COTTON MILL NEWS

North Carolina, Long Shoals. W. A. Mauney, treasurer of the Long Shoals (N. C.) Cotton Mills, Hunter Mauney, and J. L. Putnam, have purchased the Mariposa Mill from John J. Ormand and Charles A. Davis, and will make extensive repairs and replacements and start up the mill as soon as these changes are completed. The plant contains 3,264 spinning spindles and 1,600 twisting spindles, which have been operated on 18s to 30s cotton yarns.

North Carolina, Spray. While plans are not far enough advanced to give details it is known that the Thread Mills Company, controlled by Marshall Field & Co., Chicago, and operating the American Warehouse, the Lily Mill, the Nantucket Mills, the Rhode Island Mill, and the Spray Mill of Spray, and the German-American Mill of Draper, will soon begin the construction of the projected new 3,000 h. p. central steam power plant for which P. F. Sheldon & Sons, Providence, R. I., made plans several months ago, and will also make an expenditure of about half a million dollars for new buildings and improvements to include a fine weaving mill of 500 box looms at Spray and a wide sheeting mill of 1,000 looms at Draper.

Pennsylvania, Philadelphia. Extensive alterations and additions are to be made to the towel manufacturing plant of W. H. & A. E. Margerison, Jasper and Huntingdon. The improvements will include both the offices and buildings in which the company is located.

Rhode Island, Lonsdale. Old style looms are being taken out of the Ann and Hope Mills of the Lonsdale Company, and replaced with new automatic looms.

Rhode Island, Pawtucket. The Jenckes Spinning Company is considering whether to purchase additional power which will be required on the completion of the new mill or to generate power for the new machinery. The question has not been definitely settled as yet. Particulars of the new mill under construction have been given previously.

Rhode Island, River Point. New skylights have been placed on the Arctic Mill of B. B. & R. Knight, improving the ventilation of the top floor and giving more light.

*Rhode Island, Westerly. Thirty-six new automatic dobby head looms will be added to the equipment of the Westerly Textile Company, manufacturers of nettings, curtains and special fabrics. It has been noted previously that improvements were being made at the mill preparatory to receiving this new machinery.

*Rhode Island, Woonsocket. New equipment to be added by the Lawton Spinning Company in the additions now under construction will include 21,792 spindles and preparatory machinery. One of the new buildings will be one story, 117 by 59 feet, and the other will be 3 stories high, 100 by 60 feet.

RATS AND CONTRACTS (ANNOUNCEMENT)

72 Front Street, New York, February 1, 1915.

To Mill Owners and Superintendents:

The VIRUS LIMITED INC. of 72 Front Street, New York, wish to announce that they have taken over the business formerly conducted by the DANYSZ VIRUS LIMITED, of the same address and that they are now prepared to accept yearly contracts for the extermination of rats and mice and that in connection with all such contracts the wonderful bacteriological preparation, DANYSZ VIRUS, discovered and prepared by Dr. Jean Danysz of the Pastuer Institute of Paris will be used exclusively. This company also manufactures a roach exterminator of the greatest merit and we will be glad to send a sample of same to those interested in giving same a trial. Write for full information.

Yours truly,

Department 4

VIRUS LIMITED INC.

JOHN E. KENDRICK, President MYRON FISH, Treasurer M. C. FISH, Secretary

American Supply Co.

Manufacturers of Reeds, Harness, Belting and General Mill Supplies

We make a specialty of Harness for American Warp Drawing-in Machine

OFFICE and STORE—135-137 Washington St., Providence, R. I. FACTORIES—Central Falls, R. I. and Fall River, Mass.

Thread and Silk SPOOLS of any description

Made from one piece, up to 6" long and 3" dia.

We are located in the best white birch region. Our work and prices seem to satisfy the most particular customers. We can give any finish desired. Estimates furnished on samples submitted

E. L. Tebbets Spool Company, Locke's Mills, Maine

SMITH & FURBUSH MACHINE CO.

PHILADELPHIA

Manufacturers of

PICKERS Lumpers; Rag, Burr, Wool, Cotton, Jute, Fearnaught and Garnett Pickers; also Rag, Carpet and Jute Shredders.

WILLOWS—Continuous Cotton Stock Opening, Cleaning, Metal Extracting and Condensing Outfit; also Square Box and Cone Willows or Dusters.

GARNETT MACHINES—For carding cotton and woolen waste clippings, etc.; also for manufacturing cotton, wool and jute batting or felts.

FEEDS—Self feeds for cotton, wool, worsted or jute; also Camel Backs, Blamires and Apperlys.

METALLIC BREASTS—Burring Machines and Self-Stripping Feed Rolls for Cards and Garnett Machines.

RECLAIMING MACHINE—For Opening and Cleaning various kinds of Cotton Mill Waste.

CARDS—Woolen, Worsted, Cotton Waste, Shoddy, Hair, Asbestos and Jute Cards; also Special Cards for the manufacture of Wool Hats.

MULES—Heavy and Durable for Wool and Waste Yarn.

TWISTERS—Plain or Fancy Twisters for Flake, Loop or Bourette Yarn.

BOBBIN WINDERS—Automatic Jack Bobbin Builder and Adjustable Creel for different length spools.

WARPING MACHINERY—Copper Cylinder Warp Dressers with single and double size pans; beamers; Section and Pinless Warp Mills, Creels and Dresser Spoolers for Wool or Worsted.

GRINDERS, Etc.—Floor, Traverse and Portable Grinders for Cards, Garnetts or Rag Pickers; also Turning Rests, Fillet Winders, Card Clothing Stretchers and Cleaning Frames.

Special Circulars furnished for each Machine

Felting Machinery for Manufacturing Soft Felts or Commercial Batts, for Mattresses, Comforts, etc. from Cotton, Cotton Waste, Linters, Jute, Wool and Wool Waste

A complete line of Machinery for Manufacturing Gunny Bagging from Old Gunny Bagging

Complete Equipment for Manufacturing Mop Yarn and Rope from Cotton Waste

Estimates and complete plans furnished

Wool or Mixing Picker

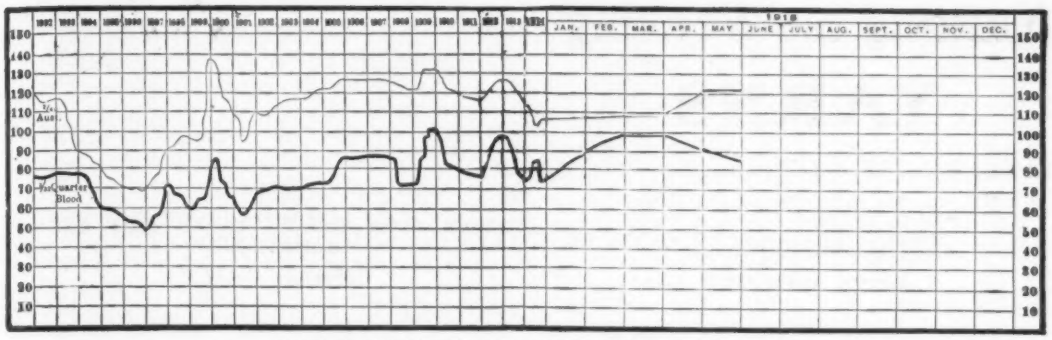
Circular R 40

Fearnaught Picker

Circular R 35

Our line of Machinery for opening and pickering all sorts of stock is very complete. We build Rag, Wool, Cotton, Jute, Hair, Waste and Garnett Pickers; also Willows and Shredders for all sorts of materials

We have a Circular covering each machine



GRAPHIC CHART SHOWING RANGE IN PRICE OF WORSTED YARN.

THE WORSTED YARN MARKET

Spinners operating on both the French and Bradford systems report that conditions, at the writing of this report, are in a somewhat better position than they were a month ago. They do not infer, however, that they are securing more immediate business in addition to specifications on old contracts which are now coming in more freely; although they are at the present time between extremely high priced wool on the one hand and a depressed condition of goods prices on the other. This is making it difficult for the spinner to secure higher prices for his product at this time, for it is absolutely impossible for him to meet present market prices on yarns and then go into the market to buy his wools to fill the orders.

The domestic wool sales in the West are now over, the last sales having taken place a few weeks ago. There was very little wool sold for the reason that the growers demanded an extremely high price for their wools, with the result that spinners, had they bought at the exhorbitant figures asked, would have been compelled to make an advance of at least 10 cents per pound on the price of yarns. Rather than accept the spinners' and wool dealers' offerings for their stocks, the wool growers shipped the majority of their wools into the warehouses, trusting for higher prices later on, while the spinners, on the other hand, anticipate securing these same wools at a lower price at some future time, providing, of course, that Australian wools do not show further advances. There are large quantities of Australian fine wools coming into this country at the present time, also quantities of South American wools which it is hoped will have a tendency to make a more even price and permit the spinners to buy their raw stock at a better figure.

There have been some sales of worsted yarns, but on small contracts for immediate shipment. No large contracts have been noted, recently, as neither the spinners nor the buyers are inclined to take chances for the reason that there is a lack of confidence all around. The majority of these sales, however, it might be well to state, were made at a slight advance over former prices of from 2 to 3 cents per pound and every indication points to the fact that spinners will have to make further increases in his charges, especially where dyestuffs enter into the sales.

BRADFORD SPUN YARN

2/12 to 2/16 low common	75-77½
2/20 to 2/24 low 1/4	80-82½
2/20 to 2/25 1/4 blood	82½-85
2/26 to 2/28 1/4 blood	82½-85
2/32 1/4 blood	87½
2/20 3/8 blood	85-87½
2/26 3/8 blood	87½-90
2/32 3/8 blood	90-92½
2/36 3/8 blood	92½-95
2/40 1/2 blood	1.02-105
2/40 delaine	1.07½
2/50 delaine	1.12½-1.15
2/40 Australian	1.17½-1.20
2/50 Australian	1.27½-1.30
2/60 Australian	1.37½-1.42
3/30 and 3/32 luster	95-97½
3/36 luster	1.10-1.12½

KNITTING YARNS

Dyed and Bleached—Bradford System

2/7s straight 1/4 blood	92½-95
2 and 3 ply 10s-20s straight 1/4 blood	95-97½
2 and 3 ply 20s-24s straight 1/4 blood	97½-99½
2 and 3 ply 24s-28s straight 1/4 blood	99½-1.01½

(Reduce 8c. for yarn in oil)

FRENCH SPUN YARN

1/20 1/4 blood	87½-90
1/20 high 1/4	90-92½
1/20 3/8	92½-95
1/20 high 3/8	95-97½
1/20 1/2 blood	97½-1.00
1/30 1/2 blood	1.00-1.02½
1/40 1/2 blood	1.05-1.07½
1/50 delaine	1.10-1.12½

Knitting and Weaving YARNS

Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment

EDWARD S. HYDE

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COMMISSION MERCHANTS
COTTON and WORSTED YARNS
BOSTON NEW YORK PHILA. CHICAGO CHARLOTTE

JAMES LEES & SONS CO.
MINERVA MILLS
Spinners of WORSTED YARNS
For Weaving and Knitting
In the Grey and in all colors and mixtures
Philadelphia Office: 627-29 Bourse Bldg.
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COTTON YARNS
of all descriptions
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French Spun Worsted and Merino Yarns
Bradford Spun Yarns
Woolen Yarns
FOR WEAVING AND KNITTING

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Bleaching, Fulling and Scouring
SOAPS
Red Oil and Olive Oil Crown Soaps
SOAPS J. O. Draper Co. Est. 1860 Pawtucket, R. I. **SOAPS**

1/40 Australian 1.02-1.02½
1/50 Australian 1.20-1.25
1/60 Australian 1.25-1.30
1/70 Australian 1.30-1.35
For two ply knitting twist add 5c. additional to above prices.
For two ply weaving yarns add 7 1/2c. additional to above prices.

FRENCH SPUN MERINO YARNS—FINE ONE-HALF BLOODS

Standard Grade

1/20 50/50 White Merino Cop 72
1/30 50/50 White Merino Cop 74
1/40 50/50 White Merino Cop 76
1/20 60/40 White Merino Cop 77½
1/30 60/40 White Merino Cop 79½
1/40 60/40 White Merino Cop 81½
1/20 70/30 White Merino Cop 83
1/30 70/30 White Merino Cop 85
1/40 70/30 White Merino Cop 87
1/20 80/20 White Merino Cop 88½
1/30 80/20 White Merino Cop 90½
1/40 80/20 White Merino Cop 92½
Sliver and Sanitary Mixes ..... 3c. more
Coning on 1/20 ..... 2c. more
Coning on 1/30 ..... 3c. more
Coning on 1/40 ..... 4c. more

WOOLEN AND MERINO YARNS

Spinners report that prices have not changed since our last report. They also state that business shows a little more activity than for two or three months. There is not much new business being placed by the consumers, but they are taking more freely from old contracts. The majority of these contracts will not run out until September, but in the meantime they are receiving quite a few orders for filling-in purposes on special yarns and in 500 to 1,000 pound lots and counts ranging from 2/16 cut, 3/16 cut, 2/20 cut, etc. The prospects for future business seems to be somewhat brighter and indications point to larger orders being placed as the season advances.

WOOLEN AND MERINO YARNS

2/20 Light Grey Mixed	80%	20%	65
2/20 Light Grey Mixed	90%	10%	67½-70
2/20 Light Grey All Wool			70-72½
2/20 Colored All Wool			72½-75
2/20 Bleached	80%	20%	75
2/20 Bleached	90%	10%	77½
2/20 Bleached All Wool			80-82½
2/23 Colored All Wool			75
2/23 Bleached 90/10			85
2/23 Bleached All Wool			87½-90
2/25 Light Gree Mixed All Wool			90
2/25 Bleached All Wool			97½-1.00

THE RAG AND SHODDY MARKET

The market for rags has been dull with prices unchanged. The few dealers and manufacturers who have found it necessary to replenish stocks have been unable to secure any concessions from current quotations. On the contrary, prices have shown a tendency to advance as soon as dealers discover that there is a demand for stock. A few weak-kneed dealers have attempted to move their stocks by quoting lower prices, but soon discovered that this method was useless. Shoddy manufacturers are booking very few orders, but profess to believe that a better business will soon develop. The lull in the army goods business has had a depressing effect on the shoddy and waste trades. Wool waste is in small supply and the business is sharing in the general dullness. Specially desirable lots of stock, however, are readily marketed. Noils are firm, particularly in the medium grades. Cotton waste is quiet and in small demand.

SHODDIES AND EXTRACTS

White knit	38-40
Red flannel	23-25
Red knit	27-29
Thibelts	17-18
Fine dark merino No. 1	16½-17½
Fine light merino	29-30
Fine black merino No. 2	15-16
Light delaine	20-21
Mixed delaine	12-13
No. 1 dark worsted	16-17
No. 2 dark worsted	14-15
Black worsted	18-19
Fine dark worsted clips	19-20
Blue serge, old	24-25
New blue clip	16-20
New black fine worsted clip	27-28
Light yarn, fine	28-30
Dark mixed, fine yarn	22-24
Dark blue hosiery clips, No. 1	17-20
Dark blue hosiery clips, No. 2	14-16

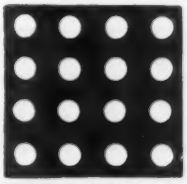
NEW WOOLEN RAGS

Fine merchant tailors	12-13
Choice light worsted	16-18
Fine gray worsted	19-20
Coarse gray clips	12-13
Fine dark worsted	13-14
Black worsted	22-23
Blue worsted	20-22
Brown worsted	16-17
Blue serge	19-20
Black serges	18-19
Light serges	20-22
Dark fancies	11-12
Dark serges	11-12
New blue flannel	15-16
New scarlet flannel	18-20

SOFTS AND KNIT STOCK

Soft woolen, best	7½
Red flannel	11¾
White softs	23½
Merinoes, fine light	19-21
Thibets	10½-11
Knit stock, red	14½
Light gray, underwear	9½-10
Coarse gray	15
Blue knit	12-12½
Mixed hoods	9
White knit stock	27-28

Woolen and Merino
YARNS
Eaton Rapids Woolen Mills
EATON RAPIDS, MICHIGAN



Perforated Plates for Wool Washing
Rinsing and Carbonizing
In Special Metal
BECKLEY PERFORATING CO.,
Garwood, N. J.

SPOTS
oil, grease and other mill stains quickly and permanently removed by the Sanitex Process. Machines installed in Textile and Knitting Mills, or Spotting done for the trade at reasonable rates.
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OAK TANNED LEATHER BELTING
AND
PICKER AND ROLLER COVERING LEATHERS
CHARLES BOND CO., 520 Arch St., Philadelphia

F. C. BARTON
65 Worth Street, New York
MANUFACTURERS OF
"LILY" BRAND NARROW FABRICS
WEB, TAPE, BINDINGS, ETC.

THE BIAS NARROW FABRIC CO.
F. C. BARTON, President
65 Worth Street, New York
Bias and Straight Cut Fabrics and Ribbons.
Embossing and Cutting Customers Own Goods a Specialty.

Leading Manufacturers Use
Cheney Silk Yarns

Silk yarns for use in silk or silk mixture goods must be of the best quality —any other may result disastrously. Cheney Brothers have, for years, supplied the leading manufacturers in the United States with silk yarns, and these yarns are of the same high quality that Cheney Brothers themselves use in making Cheney Silks. Evenness is essential, and this is assured when you buy Cheney Silk Yarns.

Furnished in the gray or dyed; organzines and trams; doubles and singles; on spools, cones or in the hank; on shuttles, bobbins, paper tubes, cones or warps; also ball warps.

Quotations and samples on request.

CHENEY BROTHERS

Silk Manufacturers 4th Avenue and 18th Street, New York

National Silk Dyeing Co.

Main Office, PATERSON, NEW JERSEY, 140 Market Street

NEW YORK SALESROOM, 60 UNIVERSITY PLACE

Skein Silk Dyeing of every description for every class of textile manufacture.

Hosiery Dye—Boil-off, weighting and dyeing, treated especially to meet the requirements of the hosiery and knitting trade.

Piece Dyeing and Finishing—All silk and silk mixed goods.

Printing—Surface and warp printing.

WORKS:

Paterson, N. J. Dundee Lake, N. J. Allentown, Pa. Williamsport, Pa.

THE SILK MARKET

The silk market is in a weak condition, and no marked activity can be noted. This is owing partly to the confusion in prices in the Japanese market, brought about by the buying up of much silk by the syndicate, which ceases to do business after June 1. It is stated that the syndicate bought nearly 7,500 bales of silk, or nearly all in the market. Their quotations being different from the regular market, the purchase has caused manufacturers to become cautious, and buying has been on a hand to mouth basis.

It is expected in Yokohoma that the new silk will be in the market by the last of June, but this crop cannot reach here before the middle of July at the earliest.

In Shanghai the market was also reported quiet with prices firm. No large transactions were closed, conservative buying being the feature.

The Canton market is still firm and prices are unchanged.

In spite of the declaration of war it is stated that the Milan market is very firm, and there is very little old silk available. It is said that the importers have been advised by their connections in Italy that hereafter no shipments will be made to German banking houses here. The effect of the war on the silk industry in Italy is unknown, but it is expected that all business will be more or less disturbed.

Manufacturers in this country are buying the raw product only for immediate consumption, preferring to wait until the present unsettled condition ends.

The broad silk manufacturers are fairly busy. This is especially true of all makers of crepes, taffetas and in fact all soft finished silks.

Ribbon manufacturers are still complaining of inactivity in their line, but are hopeful that the fall will develop a demand for their products.

The cotton manufacturers are buying some raw silk, but the hosiery trade having passed such a dull period, these manufacturers have not appeared in the market to any great extent.

The retail dry goods districts report a fair business in silks. As the season opens, merchants are expecting a much greater demand for both the broad and narrow products. Crepe de chine, meteors, charmuse and all soft finished silks are still in good demand, while taffetas and black and white stripe effects retain their former popularity. It is stated in the trade the fall styles will call for dark colors in silks, and that satin faced goods will have the call.

VILLA, STEARNS COMPANY
Telephone, 6174 Gramercy
American Woolen Building
221 Fourth Avenue, New York
RAW AND THROWN SILK
Silk on Spools, Cones, Quills, Beams
DYED SILK FOR ALL PURPOSES
Philadelphia Office:
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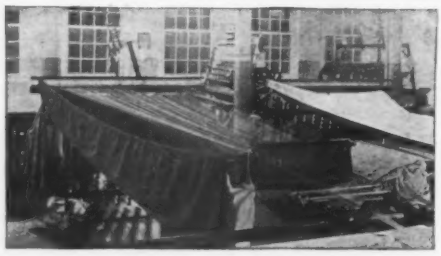
SAUQUOIT SILK MFG. CO.
INSULATING AND BRAIDING SILKS
ORGANZINE, TRAM AND HOSIERY SILKS
Fast Dye Organzines for Woolen Manufacturers a Specialty
Mills: Bethlehem, Pa., Philadelphia, Pa., Scranton, Pa.
New York Representative, Wm. Ryle & Co., 225 Fourth Ave.
Philadelphia Office, 4015 Clarissa St., Nicetown
Chicago Office, 206 So. Market St.
Boston Office, 78 Chauncy St.



Warping Dept. Lighted by Cooper Hewitt Lamps

Suppose there were only two men that you could get to manage your factory

Wouldn't you investigate both very thoroughly before engaging either one?

There are only two kinds of electric light, the ordinary kind, and Cooper Hewitt Light. How do you know that you are using the best unless you have tried both?

Cooper Hewitt Light has won its way by the most rigid competitive tests. The fact that it is now used in scores of textile factories as a result of such tests ought to be a sufficient inducement for you to give Cooper Hewitt Light a trial.

We are ready to loan you the lamps to prove our claim that Cooper Hewitt Light makes possible a uniform production for every hour of the twenty-four. It is now up to you. Write for bulletin "What Users Say," No. 754.

Cooper Hewitt Electric Company

Eighth and Grand Sts., Hoboken, N. J.

Boston Chicago Cincinnati Cleveland Detroit
Minneapolis Philadelphia Pittsburgh St. Louis

SPUN SILK

YARNS FOR ALL PURPOSES

AMERICAN SILK SPINNING CO., PROVIDENCE, R.I.

CASCAMI

SCHAPPE SPUN SILK
CORDONNETS AND NOILS
CASCAMI SILK SPINNING CO. of AMERICA,
331 4th Ave., Madison Sq. 5197, New York City

SILK THROWING and WASTE SILK SPINNING Deals with the preparation of Yarn from the Raw Silk. 158 pages; 117 illustrations; cloth. $2.50 prepaid. LORD & NAGLE COMPANY, Boston, Mass

WILLIAM RYLE & CO.,

FOREIGN AND DOMESTIC

SPUN SILK YARNS and NOILS

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

225 Fourth Ave., Corner 18th St., NEW YORK CITY

Two of the new colors for fall are known as "submarine green" and "African brown."

All in the silk industry are optimistic as to the future and believe as the fall season opens that there will be a good demand for the finished product. Below are prices current:

European

Grand Extra Classical Piedmont	3.90-3.95
Extra Classical Italian 12/14 12/16	3.75-3.80
Best Classical Italian 13/15 24/26	3.55-3.60
Classical Italian	3.50-3.55

60 days' basis

Japan

Filature Kansai Double Extra Cracks	3.60-3.65
Filature Kansai Extra 13/15	3.40-3.45
Filature Shinshu Extra 13/15	3.40-3.45
Filature Kansai Best No. 1	3.30-3.35
Filature Kansai No. 1 13/15	3.25-3.27½
Filature Shinshu No. 1 13/15	3.20-3.22½
Rereels No. 1 13/16	Nominal
Rereels No. 1 1/2 13/16	Nominal
Rereels No. 1 1/2-2	Nominal

6 months' basis

China

Canton XXA Crack 14/16	2.80-2.85
Canton XXB Ordinary	2.70-2.72½
Tsattle Blue Dragon & Flying Horse	2.65-2.70
Tsattle Kun Kee Mars No. 1	2.40-2.45
Tussah Filature Eight Cocoons No. 1-2	1.02½

6 months' basis

SPUN SILK

Manufacturers of this product report a quiet season with a small demand for spun silk. It is hoped, however, as the season advances, the former activity of this trade will again assert itself. Prices remain unchanged:

60/2	3.60
50/2	3.50
40/2	3.40
30/2	3.25
20/2	3.15
10/2	3.05

ARTIFICIAL SILK

Nothing new can be said of this industry. Manufacturers of artificial silk are still undergoing a quiet season, although they look for a good fall business. It is thought as the season advances much artificial silk will be used. All quotations available are below:

150 Deniers English A.,—Bleached	$2.00
150 Deniers English B.,—Bleached	1.88
150 Deniers English C.,—Bleached	1.75

Maine, Wilton. The Wilton Woolen Company will soon set up new looms on the second floor of Mill No. 1. The spinning and carding departments of Mill No. 2 are being operated night and day.

A. P. VILLA & BROS.

YOKOHAMA CANTON SHANGHAI — NEW YORK — MILAN TURIN LYONS

95 MADISON AVENUE

RAW, THROWN AND DYED SILKS

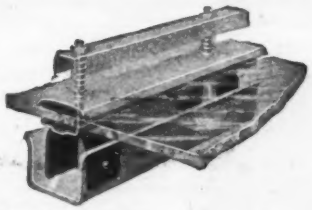
Silk on Quills or Beams

Hosiery Silk on Cones

Telephone 10080 Madison Sq.

Mills: Passaic, N. J.

In thirty-five states



ANTI-PLUVIUS (Trade Mark) Puttyless Skylights

PATENTED

and probably installations in exactly the kind of plant *you* have. We have saved so much skylight upkeep for others we want to talk to you. Let us tell you how "Anti-Pluvius" is real skylight economy.

The G. Drouvé Co., Bridgeport Conn.

MACUNGIE SILK COMPANY
Macungie, Pa.
Bindings and Ribbons
For binding Cotton and Woolen Bed Blankets, Go-cart Covers, Kimonas, Bath Robes, etc.
Special Colors or Shades made to order

LUDWIG LITTAUER
Tram, Thrown Silk, Organzine, Artificial Silk
Domestic and Imported, Plain, Gassed and Mercerized. Polished and Glazed Cotton, Mohair, Worsted and Tinsel.
Best Quality Harness Twine
107-109 Greene St., New York
Silk Throwing Mills, BEACON and YONKERS, N. Y.
YARNS

SILK MILL SUPPLIES
OF EVERY KIND AND DESCRIPTION
Also Power Transmission Supplies for General Mill Use
I. A. HALL & CO.
Paterson, N. J.
Allentown Reed, Harness and Mill Supply Co.
Allentown, Pa.

United States Conditioning & Testing Company
Cotton, Wool and Silk Conditioning
Fabric Testing and Chemical Analyses
Offices and Laboratories, 240-44 Hudson St., (cor. Charlton St.)
NEW YORK
D. E. Douty, Mgr. F. G. Boye, Supt. K. B. Lamb, Chem. Eng.

The Bradley Stencil Machine
Makes stencils in half a minute, at reduced cost of 1-10 cent each. Write for catalogue and price list.
In universal use by thousands of manufacturers and shippers.

A. J. BRADLEY
Also manufacturers of Oil Stencil Board. Write for prices and samples.
101 Beekman St.
New York, U.S.A.

You Save Enough Insurance to Pay for the Equipment
So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.
Pettes & Randall Co., 150 Nassau St., New York

THE NEW SUBSTITUTE FOR FUSTIC
FUSTINED
50% stronger than fustic. Used wherever fustic can be used. Better color and faster to light
AND CHEAPER.
We make other specialties.
SIZING SPECIALTIES CO., Inc.
JERSEY CITY, NEW JERSEY

SILK.

New Mills.

Canada, Ontario, Galt. A company is being organized under the name of the Riverside Silk Mills to establish a silk throwing plant and a silk and artificial silk winding plant here for the knitting trade. The equipment will consist of 1,000 spindles and it is expected operations will be started by June 1. Water power will be used and employment given to about 15 hands.

New Jersey, Paterson. A ten-loom broad silk plant has been started at 162 Martin St. by a Mr. Hochman.

New Jersey, Paterson. Louis Cohen has started a 20-loom broad silk plant in the Frank Mill, corner River and Bridge Sts.

*New Jersey, West Hoboken. Operations were started May 1 in the plant of Forsthoff-Dressler Weaving Company, a new concern manufacturing ribbons at 309 Franklin St. The business is to be incorporated with capital stock of $25,000.

*New York, Binghamton. Preparations are being made to build the projected $20,000 addition to the plant of the Ballard Silk Company. The enlargement will be 110 feet long, 34 feet wide, 1 story and basement and will be equipped with 36 looms and warping and winding machinery. Recently the plant has been operated overtime. Broad and dress silks are manufactured on present equipment of 32 looms and the concern does some commission weaving, warping and winding. Electric power is used. H. D. Ballard is manager and buyer.

*New York, Port Jervis. The Kattermann & Mitchell Company have removed the last of the equipment from the old mill building to the new factory and are now adding new machinery. Details of this improvement have been given previously.

*New York, Gloversville. Construction work was started last week on a mill for the new United States Silk Company, recently reported incorporated with capital stock of $30,000. Two knitting looms will be installed to manufacture silk jersey cloth and nettings. M. C. Dennie is president, superintendent and buyer, and Hugh McDonald is treasurer. The building will be rushed to completion and will probably be ready for occupancy about July 1.

*Pennsylvania, Dorrancetown. Bids are now being asked on the new silk throwing mill to be erected for the Duplan Silk Co. at Dorranceton. The new building will be two stories and basement, of reinforced concrete and brick, with a slag roof, 161 by 420 feet. The plans also include air washing, heating, cooling and humidifying and sprinkler systems, and electrical power equipment. The main plant is at Hazleton.

*Pennsylvania, Lebanon. Progress is being made on the increases and improvements underway at the Lebanon Silk Co., a branch of Jansen & Pretzfeld, of Paterson. A number of looms are being taken out of the main plant and set up in the Lebanon annex, to provide space for a quantity of new equipment which is to be added. Plain, fancy and novelty silks are manufactured.

Enlargements and Improvements.

Connecticut, Stonington. Contract for the construction of an addition to the plant of the American Velvet Company has been awarded to Harrington Bros., of Westerly, R. I. Silk velvets are manufactured.

New Jersey, Paterson. The Arcola Silk Company has purchased the Ashley & Bailey Mill at Putnam and Warren Sts, and will make repairs and install equipment, giving a first-class broad silk plant which will employ 400 hands.

New Jersey, Paterson. The M. & S. Silk Company, manufacturers of broad silks, have taken more space in the Bell Mill and will install more machinery at once.

New Jersey, Paterson. Margolin & Baten, located in the Bell Mill, have leased more space in the same building and will install a number of new looms.

New Jersey, Paterson. The Main Silk Company, manufacturers of broad silks, have moved from the Waverly Mill to the Strange Mill and are adding ten more looms.

New Jersey, Paterson. M. Salzberg & Sons, Strange Mill, have taken more space, and are installing 20 more broad silk looms.

Pennsylvania, Allentown. The addition to the plant of the Rionor Silk Company, which was started last fall, has been completed and doubles the capacity. The new wing is 64 by 138 feet, forming a right angle with the original building and is 3 stories high, of slow burning mill construction.

*Pennsylvania, Allentown. Work is practically completed on the large addition to the local plant of Kaltenbach & Stephens, which has been under construction since last fall. The new building is 92 by 350 feet, and will be equipped with 200 looms for weaving silk ribbons, giving a total of 700 looms in this plant. Other additions being erected are a new harness room, 30 by 100 feet, and an extension of the stock room. The space at present occupied by the harness department will be added to the machine shop when the new building is put in use. A finishing plant is operated by Kaltenach & Stepehens at Newark, N. J.

FACTS AND GOSSIP.

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*Massachusetts, New Bedford. At the special meeting of the stockholders of the Grinnell Mfg. Corp., the plan of the directors to increase the capital stock from $1,000,000 to $1,500,000 by issuing a 50 per cent. stock dividend was approved. The purpose of the increase is to make the capital stock conform more nearly to the value of the property.

Massachusetts, New Bedford. The Manomet Mills are running to greater capacity than at any time in the past year. Combed cotton yarns are manufactured.

Massachusetts, Pittsfield. A large export order for blankets has been received by local woolen mills.

*Massachusetts, Whitman. James L. Harring, who heads the Whitman High Speed Spinning Company, which proposes to establish a 5,000-spindle cotton yarn plant in Whitman, is manager of the New Bedford Yarn Exchange, which was organized under the laws of Massachusetts in March This concern has an office in the Olivier Bldg., New Bedford, Mass.

Michigan, Ann Arbor. The Ann Arbor Lace Company has been incorporated with capital stock of $8,500 .

Minnesota, Duluth. A benzol recovery plant has been installed in the coke oven plant of the Zenith Furnace Company.

*New Jersey, Boonton. No definite information can be learned concerning the negotiations regarding the silk manufacturing company which is in communication with the Boonton Board of Trade for manufacturing space. George U. Todd, secretary of the Board of Trade, has the matter in charge.

New Jersey, Newark. The Central Dyestuff & Chemical Company is building enlargements, which will be equipped to manufacture intermediates formerly imported by the concern.

New Jersey, Orange. Additions have been made to the plant of Thomas A. Edison, Inc., for the manufacture of aniline oil, aniline salt, carbolic acid, acetanilid and paraphenylenediamine Later on paranitraniline may also be manufactured.

MINDLIN & ROSENMAN
Importers and Manufacturers of
Our Specialty:
DYED SILK FOR THE KNITTING TRADE
on cones and tubes
RAW and THROWN SILK, ARTIFICIAL SILK
Mercerized and Cotton Yarns, Yarns and Threads
105-107 East 29th St., near 4th Ave., New York Factory and Dyehouse, **Brooklyn, N. Y.**

OSCAR HEINEMAN CO.
MANUFACTURERS OF
Dependable Thrown Silks
2701-2745 Armitage Avenue
CHICAGO

VICTOR MILL STARCH

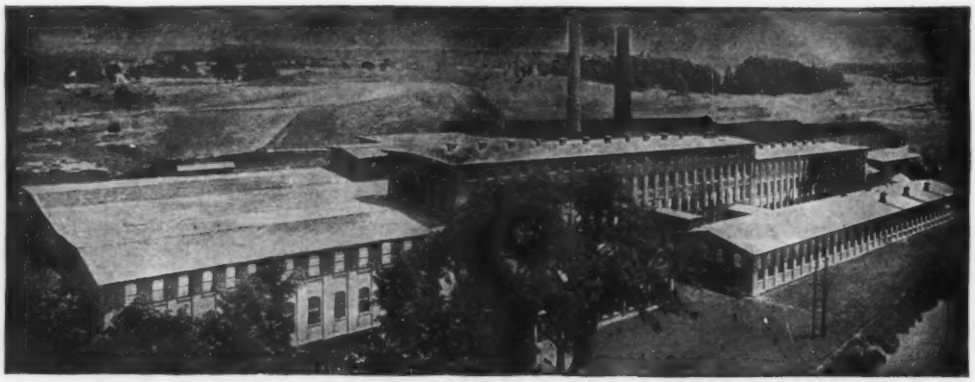
THE WEAVER'S FRIEND

IT BOILS THIN. PENETRATES THE WARPS. INCREASES BREAKING STRENGTH. THE STANDARD SIZING AND FINISHING STARCH FOR TWELVE YEARS. A TRIAL WILL CONVINCE YOU.

THE KEEVER STARCH CO.

COLUMBUS - - OHIO

EASTERN AGENT - - - D. H. WALLACE, 8 BEACON STREET, BOSTON, MASS.
SOUTHERN AGENT - - JAMES H. MAXWELL, GREENVILLE, S. C.



UTICA WILLOWVALE BLEACHING CO.

Sheetings, Shirtings, Lawns, India Linons.
Everything in White Goods.
Capacity, 30 Tons Daily

JOHN MacMANUS, Manager **CHADWICKS, N. Y.**

FIRE, LIGHTNING, WINDSTORM.

The HOME INSURANCE COMPANY NEW YORK

Elbridge G. Snow, President

Organized 1853 MAIN OFFICES, 56 CEDAR ST.

Cash Capital, $6,000,000

ASSETS, January 1, 1915 ..... $35,313,539.27
LIABILITIES (Except Capital) 16,610,065.11
SURPLUS AS REGARDS POLICY HOLDERS... 18,703,474 16

Losses Paid Since Organization over 156,000,000.00

INDEMNITY
For Loss of
Profits
Commissions
Use and
Occupancy
on acceptable
Protected Plants
at the
Minimum Rate

IS prepared to entertain liberal lines on Sprinkler-Equipped and Modern Improved risks generally, having a special department for the consideration of such business.

OWNERS OR TENANTS may have for the asking proper advices in relation to the FIRE HAZARD and the Value of Automatic Sprinkler and other protection for the manufacturing or distributing plant. Correspondence invited by the

DEPARTMENT OF IMPROVED RISKS
56 CEDAR STREET, N. Y.

DYESTUFFS AND CHEMICALS

The unsettled conditions in the dyestuff and chemical trades caused by the European situation make it impossible to get quotations which would be of any value to our readers. The dyestuff and chemical list of quotations will therefore be omitted until this trade is again on a normal basis.

FIRES.

Kentucky, Lexington. Damage of about $5,000 was done in the hemp and tow plant of J. H. Yellman by fire which originated in the engine room. The plant has just resumed operations after being idle since last November.

Kentucky, Louisville. A loss of about $1500 was caused by fire in the plant of the Kentucky Cotton Yarn Company. The damage is largely on stock.

Kentucky, Mayesville. A fire which started in the warehouse of January & Wood Company, manufacturers of twines, lines and coarse cotton yarns, caused loss of about $40,000. The warehouse and an addition containing machinery were destroyed. The main building was damaged to some extent which necessitated shutting down. The management hopes to start up with a reduced production in a week or two. They state that the burned building will be rebuilt.

Massachusetts, Fall River. Some damage was caused by a fire in the power department of the Kerr Mills of the American Thread Company. The loss is covered by insurance.

Massachusetts, New Bedford. An outside building at the cotton waste plant of Hill & Cutler on Pearl St., was destroyed by fire. At the Boston office the loss is estimated at about $2,500. The burned building will be rebuilt at once.

New York, Little Falls. A fire which started in a garnett machine in the plant of the Phoenix Underwear Company, caused considerable loss.

Pennsylvania, Philadelphia. Fire recently completely destroyed the plant of Charles Devlin at 3219 Kensington Ave., manufacturer of cotton and woolen waste for spinning purposes.

Pennsylvania, Reading. A fire in the hosiery manufacturing plant of George W. Hawk Co., Inc., Walnut and Thorn Sts., caused loss estimated at $20,000. Seamless mercerized and silk half hose, fine gauge goods, were manufactured on 100 latch needle knitting machines and 20 loopers.

Vermont, Northfield. The bleachery department of Charles M. Davis & Company, manufacturers of white flannels, has been destroyed by fire. The main mill, about fifteen feet distant from the bleachery, was saved by the fire department.

*Oregon, Eugene. Action on the lace factory project started by Harry Stevenson of Salem, Ore., which the Eugene Commercial Club has had under consideration for several months, has been deferred by the factory committee for a time.

Barrett Specification Roofs

Photo by Engineering News, N. Y.

Storehouse of

Naumkeag Steam Cotton Company, Salem, Mass. Builders—Eastern Expanded Metal Co. Engineers in charge of this building are now organized as N. E. Concrete Construction Co., Boston, Mass. Roofing Contractors—Warren Bros., Boston, Mass.

In the path of the great Salem fire—

THIS warehouse was in the centre of the great Salem fire of 1914 which swept over 250 acres of the city. It was built of reinforced concrete and roofed along the lines of The Barrett Specification. In the fierce path of flame, the rain-water conductors and the zinc flashings at the edge of this roof were melted down, but the roof itself was left intact.

After the fire the building stood, ready for immediate use, among the prostrate ruins of its neighbors. The fire underwriters in their official report said:

"The flames and smoke were driven toward these from a burning area extending over a mile back and a third of a mile in width and swept these mills along their exposed front of about a quarter of a mile in length with a heat which no ordinary construction could withstand."

The test was a triumph for reinforced concrete and this type of roofing. No wonder Barrett Specification Roofs take the base rate of fire insurance!

Barrett Specification Roofs are not expensive. In fact, they are the least costly of any permanent roofing; they cost nothing to maintain, for they require no painting, coating, or tinkering.

Special Note

We advise incorporating in plans the full wording of The Barrett Specification in order to avoid any misunderstanding. If any abbreviated form is desired, however, the following is suggested:

ROOFING—Shall be a Barrett Specification Roof laid as directed in printed Specification, revised August 15, 1911, using the materials specified and subject to the inspection requirement.

We should like to send every architect, engineer and building owner a copy of the Underwriters' Laboratories report on Barrett Specification Roofs. Address our nearest office.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati
Pittsburgh Detroit Birmingham Kansas City Minneapolis Salt Lake City Seattle

THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver St. John, N.B. Halifax, N.S. Sydney, N.S.

MILL STOCKS

FALL RIVER MILLS

	Bid.	Asked.
American Linen	53	57
Arkwright Mfg. Co.	...	60
Barnaby Mfg. Co.	...	50
Barnard Mfg. Co.	...	50
Border City Mfg. Co.	105	...
Bourne Mills	...	105
Chace Mills	100	105
Charlton Mills	...	90
Coanicut Mills	...	95
Cornell Mills	145	...
Davis Mills	...	108
Davol Mills	90	...
Flint Mills	99½	100
Granite Mills	75	...
Hargraves Mills	42½	...
King Philip Mills	106	...
Laurel Lake Mfg. Co.	95	100
Lincoln Mfg. Co.	71	75
Luther Mfg. Co.	118	...
Merchants' Mfg. Co.	79	...
Mechanics Mills	72½	77½
Naragansett Mills	90	100
Osborn Mills	...	98½
Parker Mills	45	...
Pilgrim Mill, pfd.,	93	...
Pocasset Mfg. Co.	80	90
R. Borden Mfg. Co.	130	...
Sagamore Mfg. Co.	176	...
Seaconnet Mills	...	58
Shove Mills	73½	...
Stafford Mills	67½	...
Stevens Mfg. Co.	125	...
Tecumseh Mills	105	...
Troy C. & W. Mfg. Co.	...	...
Union Cotton Mills	170	180
Wampanoag Mills	67½	...
Weetamoe Mills	70	80

NEW BEDFORD MILLS

	Bid.	Asked.
Acushnet Mill	157½	...
Beacon Mfg. Co., com.,	102	...
Beacon Mfg. Co., pfd.,	112½	...
Booth Mfg. Co., com.,	25	...
Booth Mfg. Co., pfd.,	65	...
Bristol Mfg. Co.	61	...
Butler Mill, com.,	...	75
Butler Mill, pfd.,	...	100
City Mfg. Co.	...	87½
Dartmouth Mfg. Co., com.,	170	...
Dartmouth Mfg. Co., pfd.,	100	...
Gosnold Mills, pfd.,	89	...
Grinnell Mfg. Co.	172½	...
Holmes Mfg. Co., com	122½	...
Holmes Mfg. Co., pfd.,	110	...
Hathaway Mfg. Co.	150	...
Kilburn Mills	120	...
Mahomet Mills	120	123
Nashawena Mills	80	85
Neild Mfg. Co.	...	112½
N. E. Cotton Mills Corp., com.,	100	...
N. B. Cotton Mills Corp., pfd.,	90	...
Nonquitt Spinning Co.	80	...
Page Mfg. Co.	75	...
Pierce Mfg. Co.	295	...
Pierce Bros.	100	...
Potomska Mills	122	...
Quisset Mills, com.,	...	122½
Quisset Mills, pfd.,	108	110
Sharp Mills, com.,	86	...
Sharp Mills, pfd.,	...	104
Soule Mills	64	...
Taber Mills	...	102½
Wamsutta Mills	120	...
Whitman Mills	123½	130

OTHER NEW ENGLAND MILLS

	Par Value.	Last Sale.
Amoskeag Mfg. Co., com., N. H.	100	67
Amoskeag Mfg. Co., pfd., N. H.	100	*100
Androscoggin Mills, Me.	100	140¼
Arlington Mills, Mass.	100	75
Appleton Co., Mass.	100	172
Bates Carpet Co., Me.	100	*220¼
Bigelow-Hartford, pfd.	100	*103¾
Boston Duck Co., Mass.	100	1280
Boston Mfg. Co., Mass.	100	105¼
Cabot Mfg. Co., Me.	100	100
Chicopee Mfg. Co., Mass.	100	90
Continental Mills, Me.	100	75¼
Dwight Mills, Me.	100	*1035
Edwards Mfg. Co.	100	99
Essex Co., Mass.	100	190¼
Everett Mills, Mass.	100	116¾
Fisher Mfg. Co., Mass.	100	125½
Franklin Co., Me.	100	201½
Great Falls Mfg. Co., N. H.	100	192
Hamilton Woolen Co., Mass.	100	95
Hamilton Mfg. Co., Mass.	100	77½
Hill Mfg. Co., Me.	100	90¼
Jackson Co., Me.	1000	890
Lancaster Mills, Mass.	100	75
Lawrence Mfg. Co., Mass.	100	151¾
Lockwood Co., Me.	100	97
Lowell Bleachery, Mass.	100	126⅓
Lowell Hosiery, Mass.	100	40
Lyman Mills, Mass.	100	112¼
Massachusetts Cotton Mills, Ga.	100	98
Massachusetts Cotton Mills, Mass.	100	115
Merrimack Mfg. Co., Mass.	100	23¼
Middlesex Co., Mass.	100	56
Middlesex Co., Mass., pfd.,	100	75
Monadnock Mills, N. H.	100	1000
Nashua Mfg. Co., N. H.	500	711¼
Naumkeag Steam Cot. Co., Mass.	100	195¼
Newmarket Mfg. Co., N. H.	100	95¼
Otis Mfg. Co., Mass.	1000	1352½
Pacific Mills, Mass.	100	119
Pepperell Mfg. Co., N. H.	100	345
Plymouth Cordage Co., Mass.	100	217
Salmon Falls Mfg. Co., N. H.	300	225
Shaw Stocking Co., Mass.	100	75
Suncook Mills, N. H.	100	20
Thorndyke Mfg. Co., Mass.	1000	1305
Tremont & Suffolk Mills, Mass.	100	100¼
Waltham Bleachery & Dye Works, Mass.	100	*100¼
York Mfg. Co., Me.	100	85

SOUTHERN MILLS

	Bid.	Asked.
American Spinning Co.	155	.....
American Spinning Co., pfd.,	100	...
Arkwright Mills	...	100
Avondale	120	126

Arlington	130	136
Brookside	...	...
Cannon	125	...
Carbarrus	115	...
Chadwick-Hoskins	...	...
Chadwick-Hoskins, pfd.,	...	100
Clara	100	...
Cliffside	190	...
Columbus Mfg. Co.	94	100
Darlington	...	83½
Erwin, pfd.,	100	...
Easley	...	175
Florence	125	130
Gibson, com.,	...	105
Grendie	...	96
Glenwood	...	150
Glen Lowry, pfd.,	...	76
Highland Park	...	200
Highland Park, pfd.,	151	200
Hartsville	175	195
Hartsville, pfd.,	...	100
Henrietta Mills	...	125
Kesler	140	160
Loray Mills, pfd.,	...	86
Modena	...	96
Monarch, S. C.	115	...
Newberry	125	...
Norris Mills	...	121
Ninety-Six	130	140
Orr	...	86
Ozark	100	110
Pacolet Mfg. Co., pfd.,	100	...
Patterson	130	...
Piedmont Mfg. Co.	150	167
Pell City, Ala.	...	80
Poe, W. F., Mfg. Co.	100	103
Salisbury	150	...
Roanoke Mills	...	155
Saxon	...	...
Spartan	100	...
Toxaway	...	131
Warren Mfg. Co., com.,	78	...
Warren Mfg. Co., pfd.,	...	107
Washington Mills	...	...
Washington Mills, pfd.,	...	100
Woodside Mills Co., com.,	...	88½
Woodside Mills Co., pfd.,	...	80
Woodside Mills Co., guar.	...	101
Watts	...	85
Williamson	...	125
Ware Shoals	70	...
Whitney	110	120
Woodruff	...	107
Young Hartsell	90	...

CANADIAN MILLS

C. Cottons	28	...
C. Cottons, pfd.,	74	76
Dominion Textile	74¼	78
Dom. Textile, pfd.	...	75
M. Cottons	51	51½
M. Cottons, pfd.	...	100

*New Jersey, Paterson. Operations have been started by the new Empire Piece Dyeing & Finishing Company in a building at 66 George St. This concern was recently incorporated with capital stock of $25,000. Jean M. Thomas is president and superintendent, and Michael E. Manley is treasurer, agent and buyer.

*New Jersey, Rochelle Park. Construction work will be started at once on the rebuilding of the dye house of the Rochelle Park Velvet Company, Gustave A. Klinge, proprietor. This department was destroyed by fire in April with loss of about $10,000, fully covered by insurance. The new dye house will be larger than the old one and will give increased facilities. A business of dyeing and finishing velvets, velvet ribbons and silks in the piece, is carried on.

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Opaqueness. Weight. Thoroughly Penetrates the Warp. Strengthens Goods.
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1,200,000 pairs now in use
Best Saddle for Top Rolls of Spinning Frames
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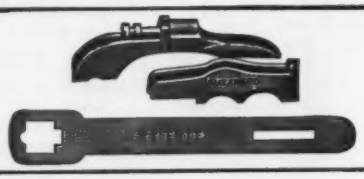
Manufacturers of all kinds of Saddles, Stirrups and Levers



WOOLEN MILL NEWS

Massachusetts, Clinton. A tunnel is to be constructed by the Bigelow-Hartford Carpet Company to connect two of its mills at a cost of about $4,000.

*Massachusetts, Lowell. In the course of a month or six weeks work will be started on a large addition to the plant of the Lyon Carpet Company, on West Adams St., to provide space for the Axminster looms purchased from the Read Carpet Company of Bridgeport, Conn. Plans for the addition have not been completed but they will provide for a 2-story annex to the main building with a floor space of 6,000 to 7,000 square feet. George A. Lyon, treasurer and buyer of the concern, is quoted as stating that he expects work on the new structure to be started about the middle of June. Some of the machinery from Bridgeport has arrived and has been set up temporarily in the old plant.

Massachusetts, Medway. A rearrangement of equipment is being made in the local plant of the Fabyan Woolen Company.

*Massachusetts, Millbury. A general increase of all departments will be made by W. W. Windle Company, scourers, carbonizers and dyers of wool, waste, etc., when the third story is added to the mill in the fall as projected.

*New Jersey, Hightstown. Good progress is being made on the construction of the new 3-story addition, 50 by 100 feet, by the Hightstown Smyrna Rug Company. Fifteen new Axminster rugs with auxiliary machinery will be added to the equipment. Electric power will be used.

*New Jersey, Newark. Plans have been drawn for an addition to the plant of the Basch & Greenfield Co., manufacturers of wool fiber, shoddies, flocks and wool stock. They call for a concrete building, 45 by 100 feet, 2 stories high, to be equipped as a picker building. They propose to install eight new shoddy pickers and additional lumper machinery. The building will be as nearly absolutely fireproof as it is possible to construct it and will be equipped throughout with a sprinkler system.

*New York, Rensselaer. William Barnet & Son, manufacturers of wool shoddies, have awarded the contract for the construction of a new mill to Morris Kantrowitz, of Albany. Construction work will be started immediately, and the building when finished will be 3 stories, 351 feet long, by 60 feet wide, of modern reinforced concrete construction. The building will occupy the site of the old mill which was destroyed by fire in February. It is expected the mill will be ready for machinery in about three months.

Pennsylvania, Philadelphia. A plot of ground taking in the block at 25th, 26th, Reed and Dickinson Sts., has been purchased, it is reported, by S. B. & B. W. Fleisher, manufacturers of yarns and braids with mills in Manayunk and at 25th and Callowhill Sts. It is said that on this site they will erect a new building into which they will remove their braid mill, their old building being taken over by the city in connection with the construction of the new parkway.

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are so liberally designed and so sturdily constructed that they will operate for years without need of repairs providing they are properly supplied with oil while in service.

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IT is entitled "Lubrication of Textile Machinery" and we have reserved a copy for YOU. If you will promptly send us your address we will be happy to mail YOUR copy. No obligation whatever.

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Built for Hard Service
Hill's Dye House Cans

Our method of construction gives exceptional durability. Made from the best galvanized sheet iron —all rings riveted into can and then soldered. The bottom is locked on to the ring in a way to make it practically indestructible. Nothing like them for handling wet warps.

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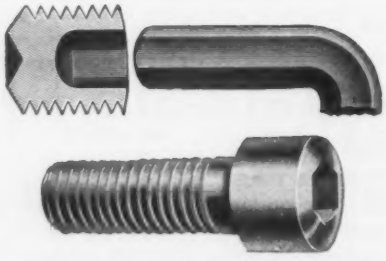
Allen Safety Set Screws
and Socket Cap Screws



Send for Circular No. 6 and free sample screws for testing

THE ALLEN MFG. Co., Hartford, Conn.

173 Princess St., Manchester, England

FACTS AND GOSSIP.

*California, Oakland. The California Cotton Mills Company deny the report that they have added the manufacture of absorbent cotton to their products. Recently new bleaching equipment was installed in the plant.

Connecticut, Bridgeport. There will be no changes in the business of Alb. & E. Henkels, as a result of the recent incorporation of the business with capital stock of $250,000. This plant, which manufactures cotton and linen laces, has been operated as a branch of the business at Langerfeld, Germany. H. Albert Philips is manager.

Connecticut, Stamford. The Stamford Mfg. Company, manufacturers of dye and tanning extracts, are running their plant full, producing vegetable dyes.

Maine, Sanford. The stockholders of the Goodall Worsted Company approved the plan to increase the capital from $1,000,000 to $1,850,000. The increase will be in a form of stock dividend.

Massachusetts, Fall River. The Durfee Mills have purchased an old mill site in Swansea. They own a water privilege in the town.

Massachusetts, Fall River. It is reported that a committee of the directors of the Barnaby Mfg. Company has been negotiating for the sale of the plant and a rumor has appeared that the Davis Mills are considering taking over the property. In connection with this rumor Frank L. Carpenter, treasurer of the Davis Mills, is quoted as stating that there is nothing to be given out. The Barnaby plant is now under four attachment suits.

*Massachusetts, Fall River. The seven mills of the Fall River Iron Works are in operation again and practically all the weavers, who have been on strike, have returned to work. There is a shortage of help in some departments, but this condition prevailed before the strike took place. The weavers on automatic looms are leaving their looms running during the noon hour in conformity with the terms of settlement.

Massachusetts, Holyoke. The W. H. Bullard Thread Company is now operating in the new quarters at 9 Suffolk St. and is busy on orders which insure the full operation of the plant for some time to come.

The Best and Simplest

Machine on the Market for

Cutting Out Floating Threads

of Double Sole and High Spliced Heel Hosiery

Cuts and turns at one operation

There is no limit to capacity. Depends entirely on operator. A child can operate it. Send for further particulars to the builders.

Weinerth Ktg. & Machine Co., Inc.

316-320 McNight St., Reading, Pa.

FACTS AND GOSSIP.

.....

Alabama, Montgomery. The Montala Mfg. Company, shirtings, sheetings and drills, are running day and night. The Montgomery Cotton Mills, duck and osnaburgs, are operating full time with all machinery running.

*Canada, Ontario, Galt. P. F. Fitch is interested in the Riverside Silk Mills, a new concern which is to establish a 1,000-spindle plant here for silk throwing and silk winding.

Canada, Ontario, Hespeler. A knitting plant for manufacturing men's, women's and children's hosiery is being operated at 6 Albert St. by Schauss & McTearnen. The equipment includes 6 knitting machines. Mr. McTearnen is buyer.

Canada, Ontario, Peterborough. The Lavoie Knitters is the name of a new concern which has begun the manufacture of sweaters, hosiery and mittens at 127 Sophia St. Eight knitting machines are operated.

Canada, Ontario, Petrolia. The Alvinston (Ont.) Flax Company, contemplates establishing a branch plant in Petrolia.

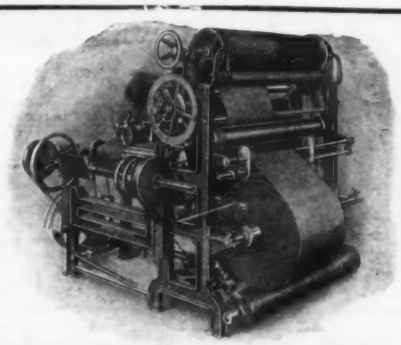
Canada, Ontario, Toronto. The Ontario Flax Company, Ltd., has been incorporated with capital stock of $40,000 to cultivate and manufacture flax, hemp and other fibers.

*Canada, Quebec, Sherbrooke. A charter has been granted Julius Kayser & Company, Ltd., with capital stock of $25,000. It was noted some time ago that Julius Kayser & Company, of Brooklyn, N. Y. had leased manufacturing space and would establish a branch at Sherbrooke. This branch is now in operation.

Canada, Ontario, Toronto. The Star Knitting Mills, Ltd., is the name of a concern manufacturing sweaters for men, women and children at 92 Sherbourne St. on 28 knitting machines and 17 sewing machines. L. Adelberg is president and buyer. The product is sold through E. H. Walsh & Company, Toronto.

Colorado, Denver. John C. Skinner, of the Western Chemical Mfg. Company, in an address before the members of the Colorado Manufacturers' Association, stated that Denver men with large real estate holdings have interested themselves in the matter of establishing cotton mills in Denver. Steps are being taken to bring about an adjustment of freight rates between Denver and Galveston, which will make possible the operation of cotton mills in Denver, according to Mr. Skinner.

District of Columbia, Washington. The rules and regulations in regard to the importation of foreign cotton lint, which were discussed at a conference in Washington on April 20, have now been promulgated by the Secretary of Agriculture. The regulations are substantially those which were submitted to the consideration of representative cotton merchants and manufacturers at the conference. The date when they become effective, however, has been changd from June 1 to July 1, 1915, and the regulation requiring fumigation at the port of entry has been omitted for the present.



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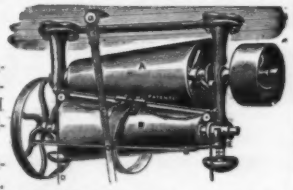
Variable Speed Countershafts

Evans Friction Cone Pulleys



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FOR
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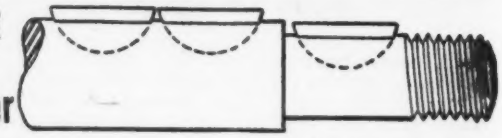

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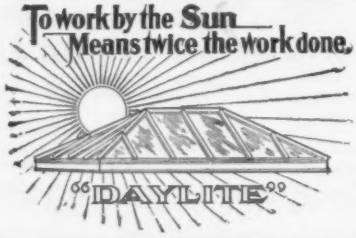

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ADMIT DAYLIGHT NOTHING ELSE
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Installed in any type of boiler without change in setting. Uniform superheat guaranteed.

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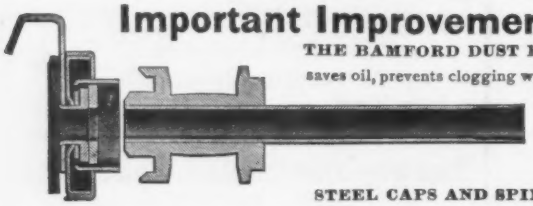

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saves oil, prevents clogging with dust and lint, thereby insuring longer life to the tubes, saves labor, maintains uniform speed, **and most important of all,** makes PERFECT YARN. Refer to largest worsted mills.

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100 MILLS CAN TESTIFY
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Will not split or warp;
Not liable to break.

MFG. BY
CHAFFEE BROTHERS COMPANY,
OXFORD, MASS.
BOX SHOOKS and CLOTH BOARDS.

Clean
LIGHT
Strong

FACTS AND GOSSIP.

Florida, Titusville. A charter has been granted the Palmetto Products Company with authorized capital stock of $1,000,000. This company has a project for establishing a plant at Titusville to weave rugs, cotton bagging and to manufacture twine from a fiber secured from Palmetto leaves. Matthew J. Smith is president of the concern and C. A. Stephens, 17 Madison Ave., N. Y., is agent. It is reported that contract has been awarded to J. F. Easterly, of Titusville, for the construction of a building, 300 feet long, but this has not been verified.

*Georgia, Columbus. A news report states that the yarn mill project started in Phoenix City, Ala., by a number of prominent citizens several weeks ago is making progress. A site for the mill has been decided upon but information as to the location is being withheld, according to report, while negotiations are going on. J. S. Bland, of the Bland Real Estate & Insurance Company, of Phoenix, is interested. This is a $150,000 yarn mill project.

Georgia, Raymond. J. E. Gilbert, secretary of the Raymond Industrial Club, is interested in a plan to establish a knitting mill.

Georgia, Rossville. Goods are being shipped to Australia, England, Russia, France, Canada, South America, Africa and Italy by the Richmond Hosiery Mills of this city. The plant is running night and day. Seamless and ribbed hosiery for men, women, children and infants is manufactured.

Illinois, Champaign. Reports that the Textile Mfg. Company would remove its plant from Champaign to Pawtucket, R. I., are incorrect. They state they have no intention of leaving Champaign.

Illinois, Chicago. Bauer & Black are increasing their facilities for bleaching absorbent cotton.

Indiana, Indianapolis. O. L. Remington, general manager of the firm of William McLean & Co., Melbourne, Australia, is now in this country with H. P. McColl, one of their engineers, investigating methods, machinery and development in textile manufacturing. For a short time he can be reached at 3219 North Capital Ave., Indianapolis; later on at the Hotel LaSalle, Chicago, following which Messrs. Remington and McColl will visit the textile centers in the East and then cross to England. He is particularly interested in the matter of machinery as applied to this industry. This is a very large Australian concern having branches and agencies in all the principal cities of Australia and New Zealand and a factory at Collingswood.

*Kentucky, Covington. The business of the Argonaut Cotton Mill Company is being liquidated on account of the expiration of the charter under which they were doing business, and owing to differences among the stockholders regarding the renewal of the charter. The property is being advertised for sale. Cotton warps, twines and wicks were manufactured on 4,800 spindles, and this equipment, with good will and brands, is to be sold.

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We Build Hand and Power Elevators
in all sizes and capacities with all modern safety appliances
Get Our Prices On Elevators
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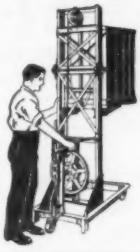
enable one man to lift heavy boxes, bales, barrels and rolls, clear to ceiling's height. Built to operate by hand, electric or pneumatic power. Portable, safe and simple.
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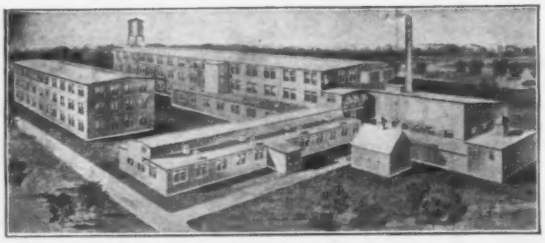

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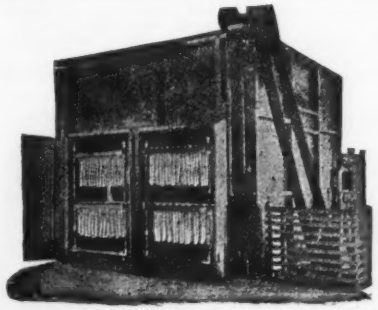

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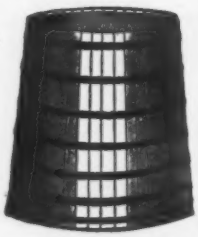

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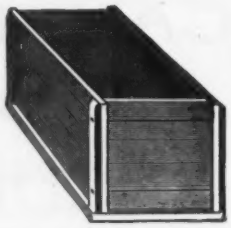

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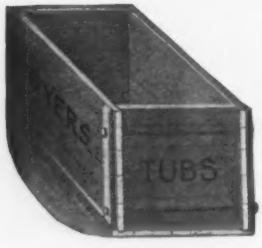

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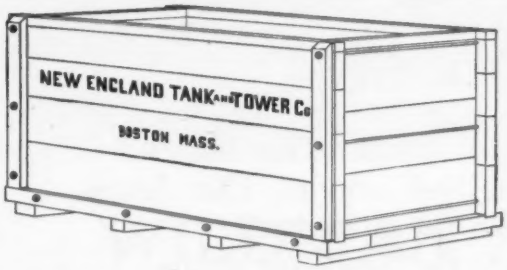

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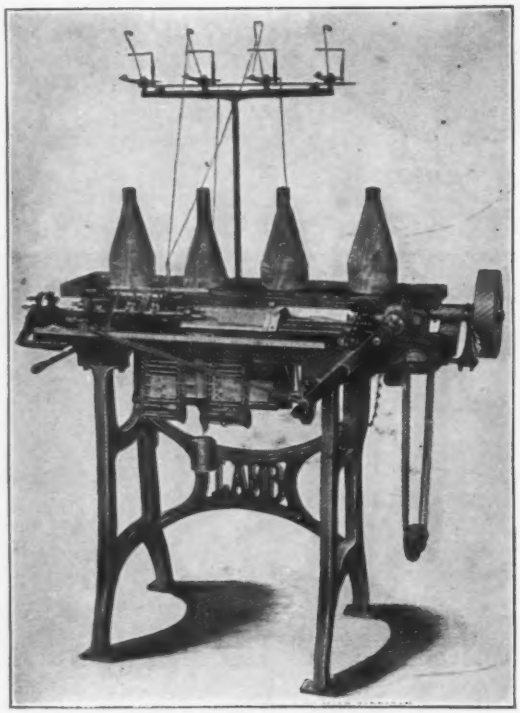

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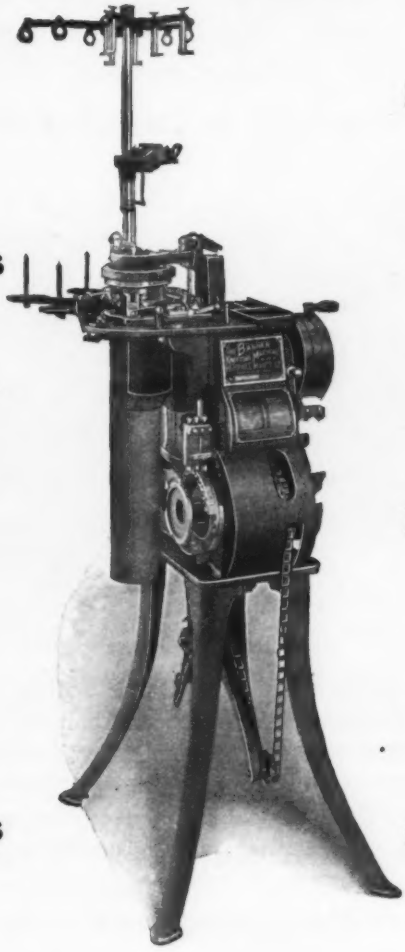

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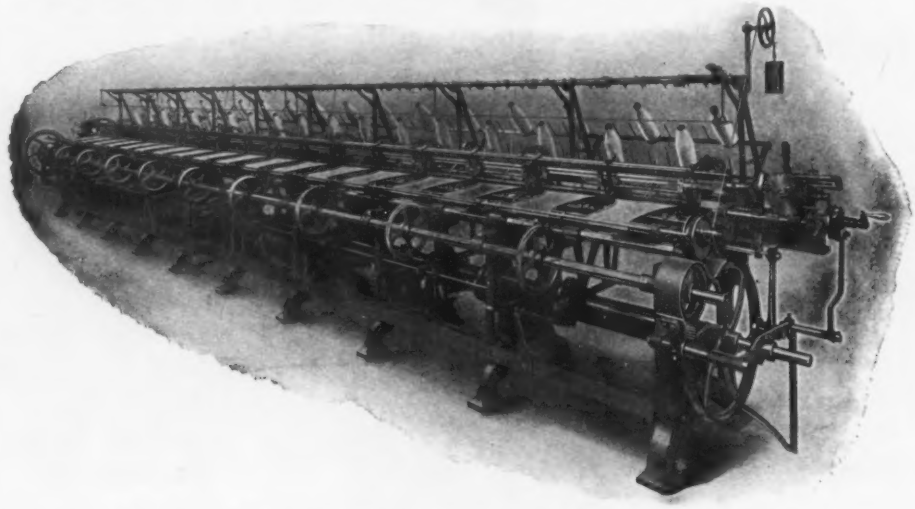

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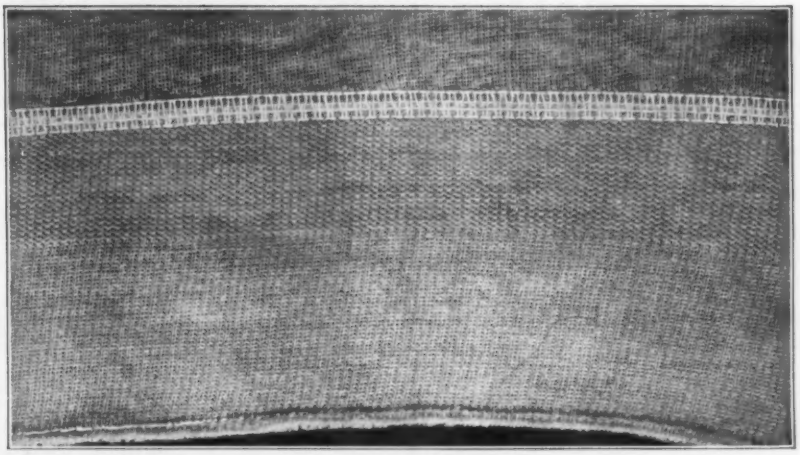

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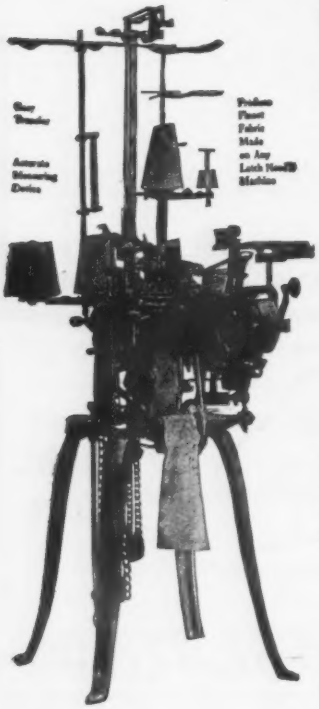

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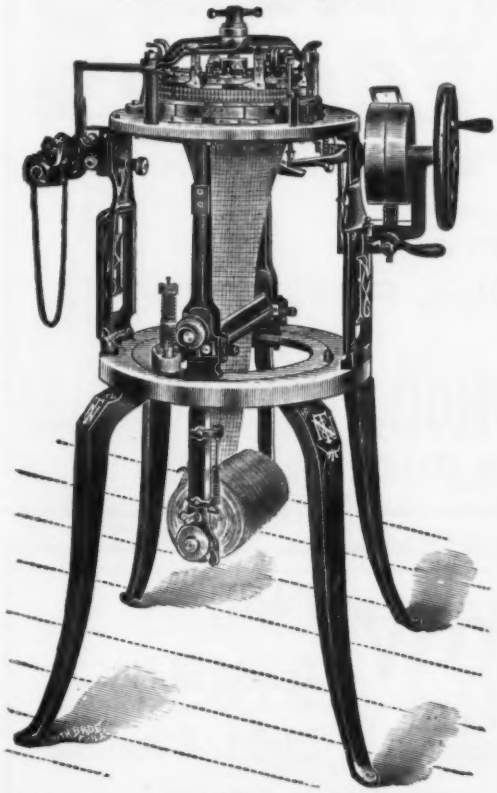

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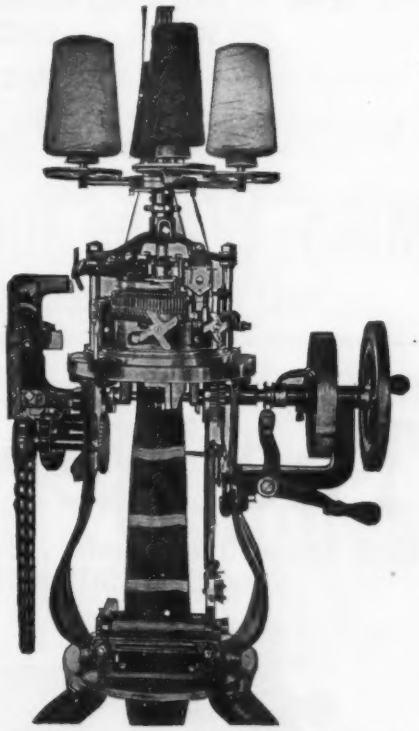

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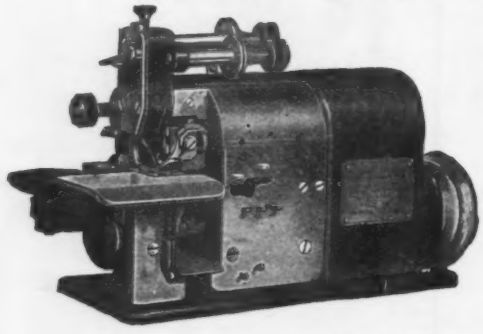

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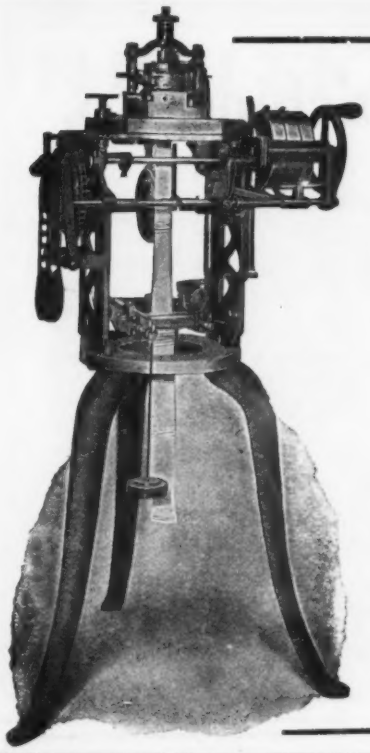

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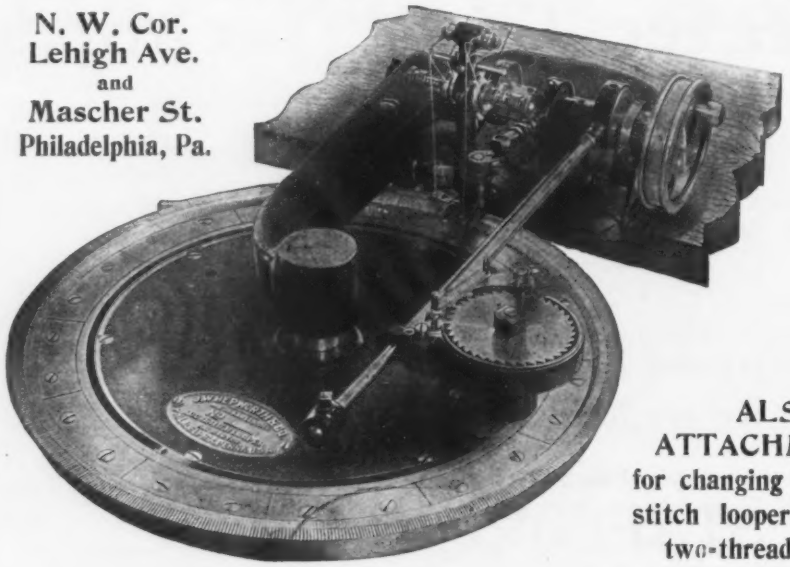

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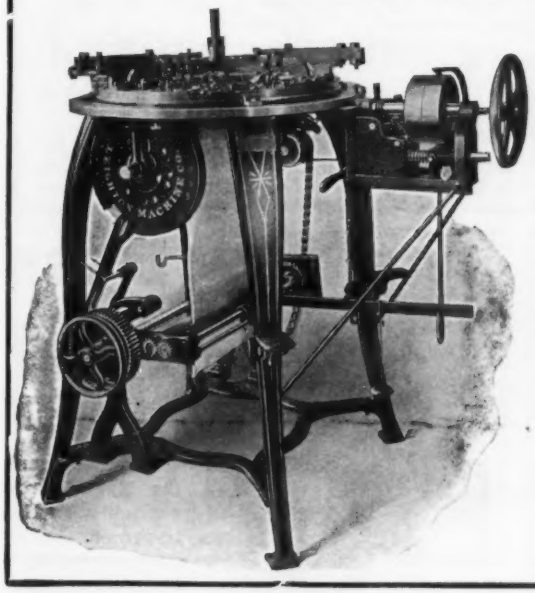

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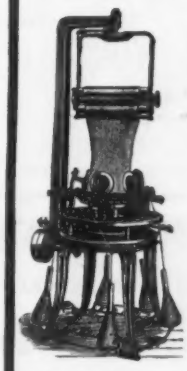

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Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders.

Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.

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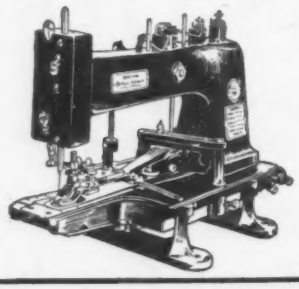
The Elastic Stitch Keeps the Buttons On



The Elastic Stitch Button Sewing Machine successfully overcomes button sewing troubles: Because

(1) It does not pull the button down tight.
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Because, the stockings you make will fit perfectly and bring you repeat orders.

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because we make a superior grade of needles

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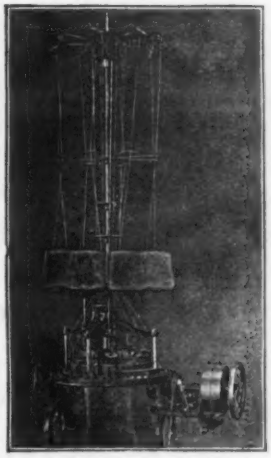

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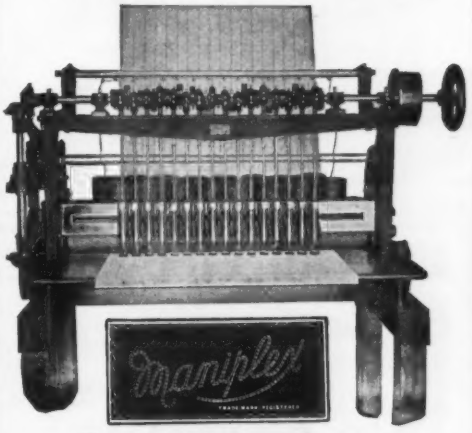

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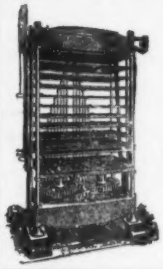

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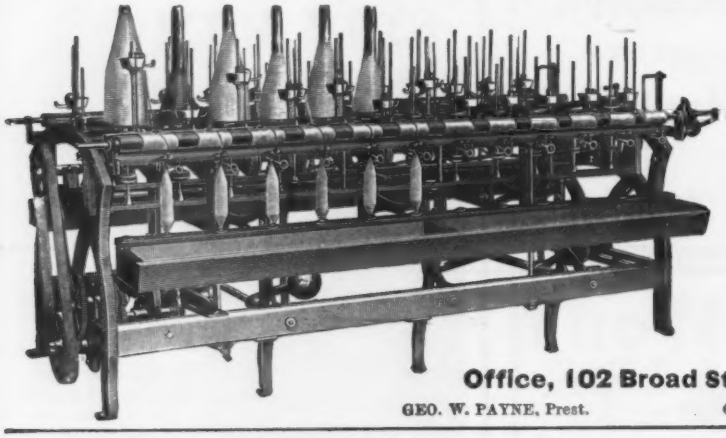

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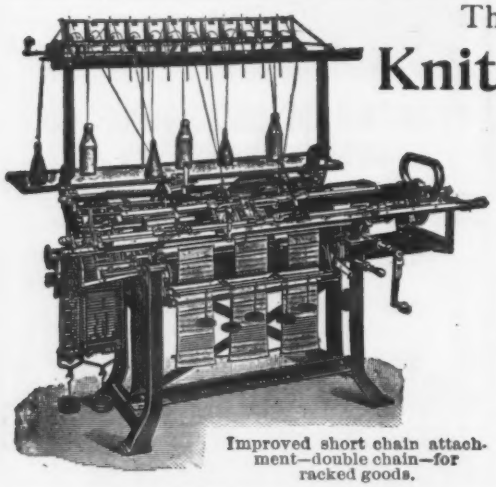

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160,000 Knitting Machines in use all over the Universe

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It will protect lives and property.

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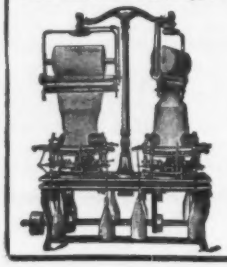
IN THE WESTERN HEMISPHERE

Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:

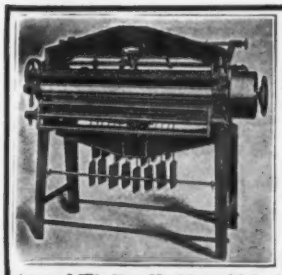
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer I started in this business about the middle of May, 1900.



Tompkins Knitter

This design was adopted in 1875.

BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLEY Was born, according to his testimony in the case above cited.



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YOU ONLY NEED ONE MACHINE where before it required two, and you get an *extra* strip from every bolt of cloth.

It cuts the corners of expense in every way and leads to *more and greater profits.*

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Mail a card for complete information and prices. When in need of special machinery write me.

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Machine for rapid and Economical Method of Attaching Labels to Hosiery or other Garments.

Uses pointed staples, cannot tear the finest fabric.

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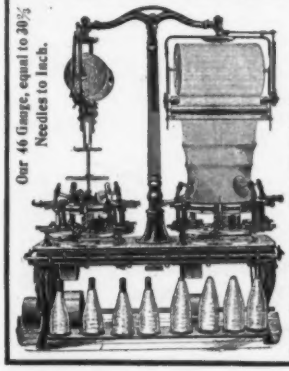

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45 Years Practical Experience

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The above machine will also produce our new patent cloth made with a staggered needle.

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¶ A New Type of Hosiery Machine—being the result of 22 years of actual experience in studying the needs of the trade.

¶ Your investigation desired.

¶ Can be seen running at all times.

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Quick Drying Ink

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that is guaranteed not to wash out of any fabric when applied as per instructions. ¶ Neither sulphur, lime nor peroxide bleach effect it. ¶ We will leave the proof of our claims to the sample we will send on your request.

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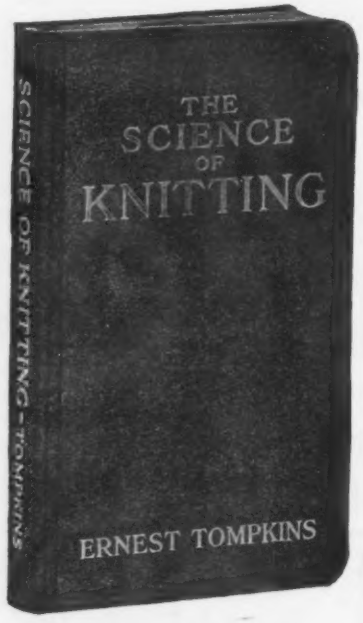

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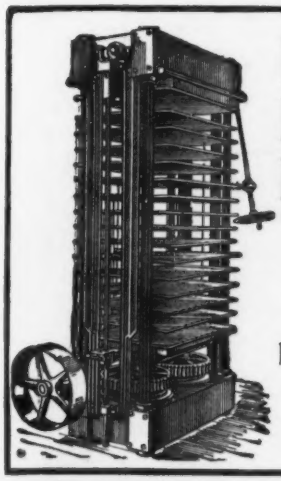

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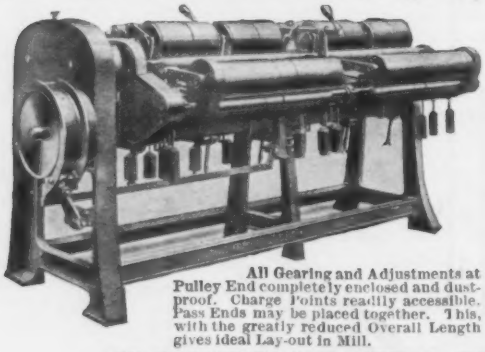

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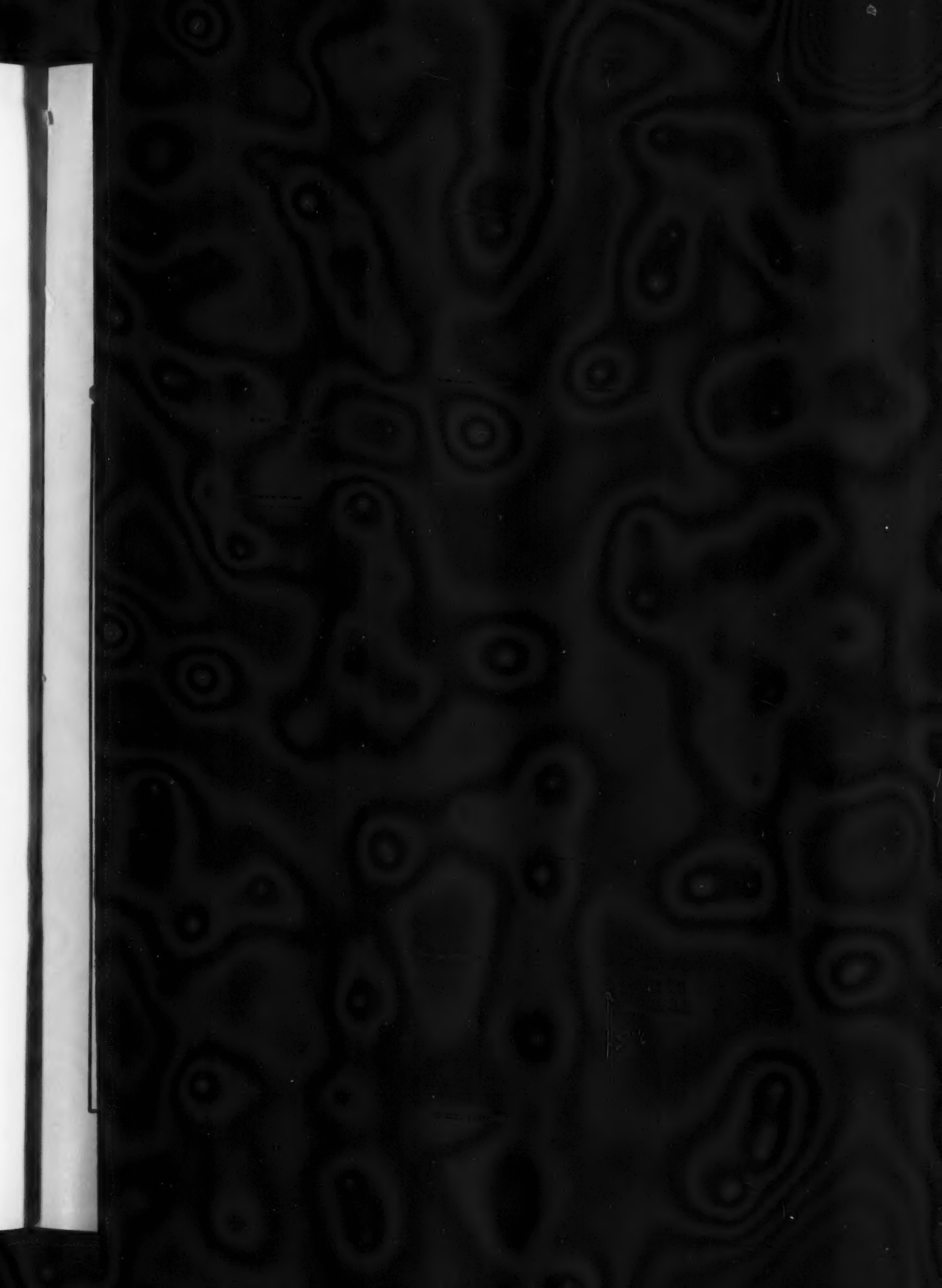

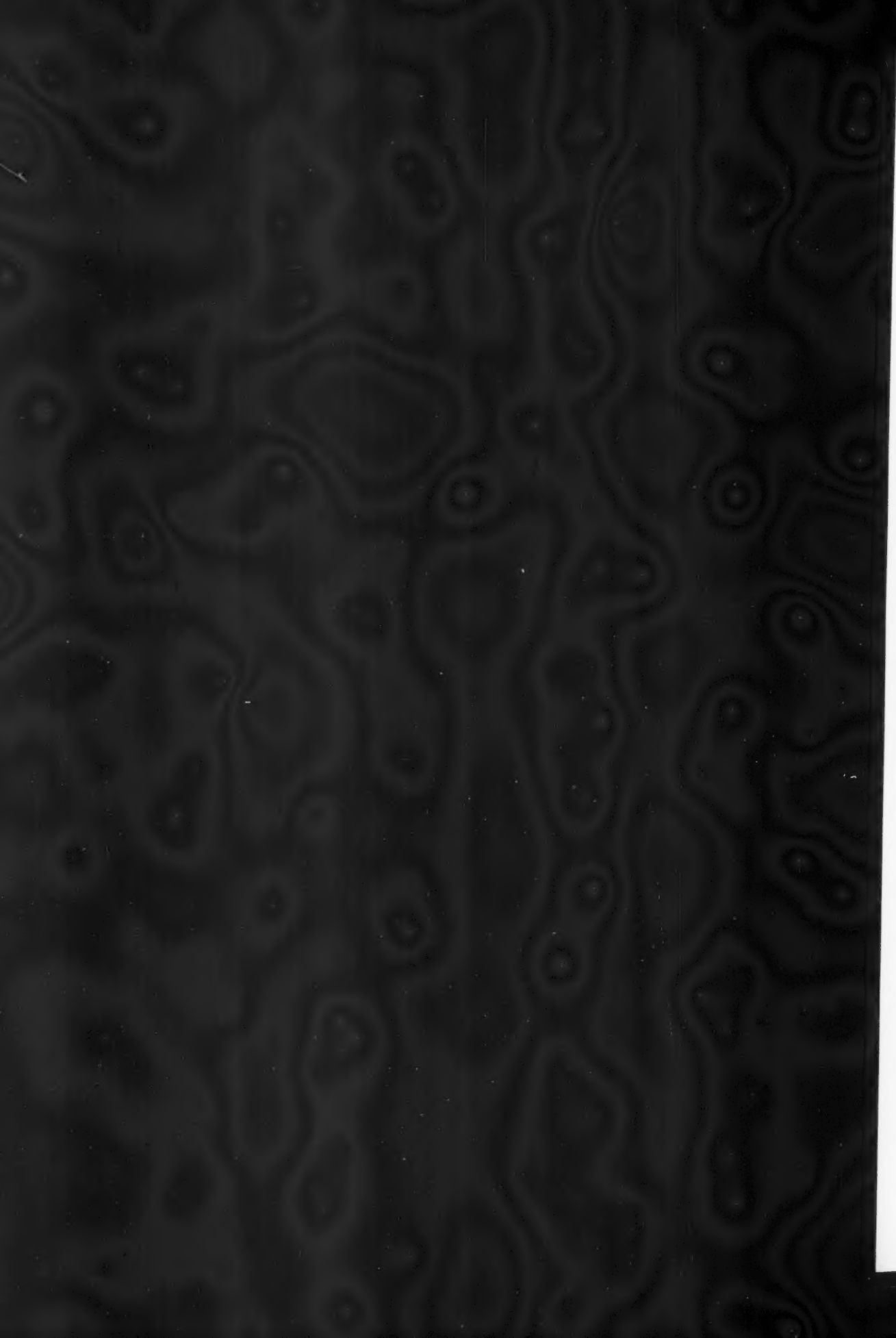

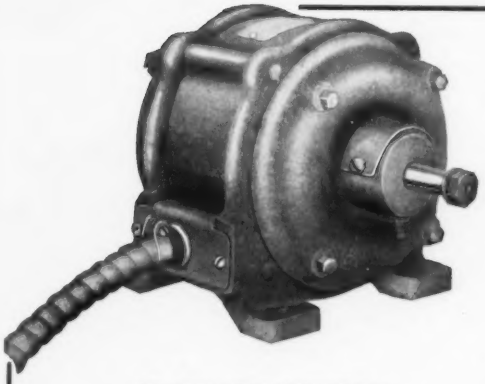

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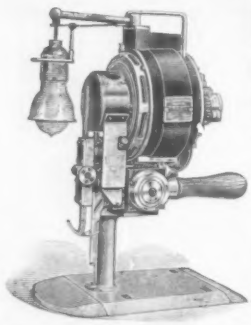

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